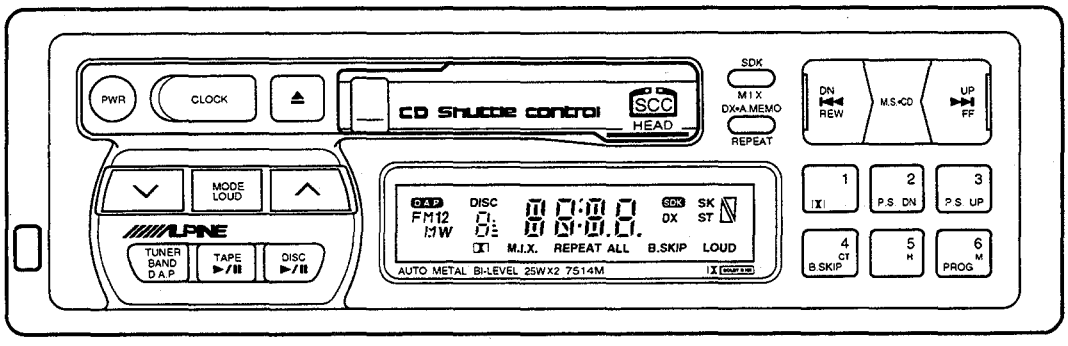
ALPINE®

SERVICE MANUAL

FM/MW/LW Cassette Receiver

CD Shuttle Controller

● For the cassette deck mechanism parts (GR75H110/120) of this model, refer to the Service Manual • GR/GR-Y Series (68P20504W07).



7513M/7513L
7514M/7514L

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Spare Schematic Diagram Inserted.

Specifications

FM RADIO

Intermediate Frequency	10.7±0.1MHz
Frequency Range	87.5~108MHz
Usable Sensitivity (Mono, 98.1MHz)	17.2dBf
Limiting Sensitivity	19.2dBf
S / N Ratio (Stereo 98.1MHz)	56dB
Image Rejection (106.1MHz)	40dB
IF Rejection (90.1MHz)	60dB
Distortion (Input 1mV, 98.1MHz)	1%
Stereo Separation (98.1MHz)	20dB
Frequency Response (98.1MHz, Ref. 400Hz)	100Hz : 0±3dB
	10kHz : - 12±3dB
SK Sensitivity (98.1MHz)	25.2dBf (□, ■)

MW RADIO

Intermediate Frequency	450kHz
Frequency Range	531~1,602kHz
Usable Sensitivity (999kHz)	34dB
S / N Ratio (999kHz)	44dB
Image Rejection (1,404kHz)	50dB
IF Rejection (603kHz)	60dB
Distortion (999kHz)	1.5%
Frequency Response (999kHz, Ref. 400Hz)	100Hz : - 3±4dB
	4kHz : - 12+6, - 12dB

LW RADIO

Intermediate Frequency	450kHz
Frequency Range	153~281kHz
Sensitivity 20dB S / N (216kHz)	41dB
S / N ratio (216kHz)	42dB
Image Rejection (216kHz)	40dB
IF Rejection (216kHz)	50dB
Distortion (216kHz)	1.5%
Frequency Response (216kHz, Ref. 400Hz)	100Hz : - 3±4dB
	4kHz : - 12+6, - 12dB

TAPE PLAYER

Wow & Flutter (JIS, WRMS / MTT - 111N)	0.2%
Tape Speed (MTT - 111N)	4.76cm / sec. +3 to - 1%
S / N Ratio (MTT-212)	Dolby OFF : 52dB
	Dolby B : 56dB
Distortion (MTT-118N)	2%
Frequency Response (Ref. 1kHz, - 3dB, MTT-256)	63Hz~12.5kHz
Separation (MTT-141N)	35dB
Crosstalk (MTT-121N)	45dB
FF & REW Time (C-60)	140 sec.

GENERAL

Power Supply ..... 14.4V DC
Output Power / Impedance ..... 11W / ch / 4 ohm
Semiconductors ..... 11 IC's, 37 Transistors, 22 Diodes, 5 Zener Diodes (■)
10 IC's, 36 Transistors, 22 Diodes, 5 Zener Diodes (▲)
12 IC's, 38 Transistors, 18 Diodes, 5 Zener Diodes (□)
11 IC's, 37 Transistors, 18 Diodes, 5 Zener Diodes (△)
Dimension (W×H×D) ..... Nose : 171×47.5×22 mm
Chassis : 178×50×153 mm
Weight 1.4kg

NOTE : Due to Continuing product improvement, specifications and designs are subject to change without notice.

■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only,
△ : For 7514L Model Only, Others : Common.

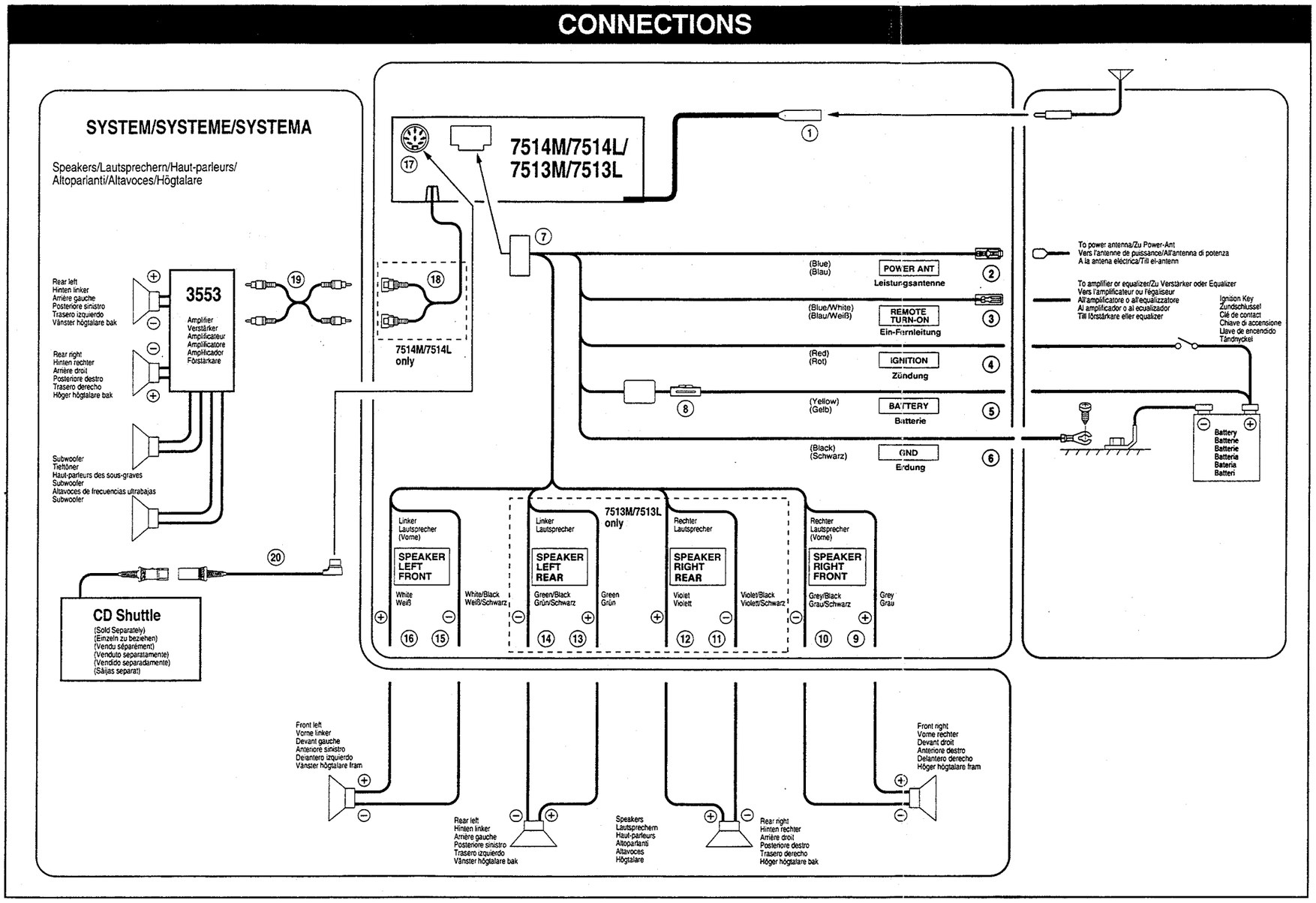
ERROR INDICATION FOR CD SHUTTLE

INDICATION	CAUSE	SOLUTION
E–01	Disc-change malfunction.	Consult your Alpine dealer.
	Disc-change malfunction.	Press the magazine eject button and pull out the Magazine. Check for error indication. Insert the magazine again. If the magazine can not be pulled out, consult your Alpine dealer.
	Magazine ejection impossible.	Press the magazine eject button. If the magazine does not eject, consult your Alpine dealer.
E–02	Disc is in player mechanism.	Press the magazine eject button, and insert an empty magazine.
———H	High Temperature.	Will disappear when the temperature returns to operation range.
EEEE	Misconnection or disconnection of CD Shuttle.	Check connection between CD Shuttle and control unit.

INDICATION FOR 7514M/7514L/7513M/7513L

INDICATION	MEANING
————	The magazine is not installed into the CD Shuttle.

CONNECTIONS



① **Antenna Receptacle**
② **Power Antenna Lead (Blue)**
When loaded with a power antenna, connect to the +B terminal of the power antenna.
③ **Remote Turn-On Lead (Blue/White)**
Connect this lead to the remote turn-on lead of your amplifier or signal processor.
④ **Switched Power Lead (Ignition) (Red)**
Connect this lead to an open terminal on the vehicle's fuse box or another unused power source which provides (+)12V only when the ignition is turned on or in the accessory position.
⑤ **Battery Lead (Yellow)**
Connect this lead to the positive (+) post of the vehicle's battery.
⑥ **Ground Lead (Black)**
Connect this lead to a good chassis ground on the vehicle. Make sure the connection is made to bare metal and is securely fastened using the sheet metal screw provided.
⑦ **Power Supply Connector**
⑧ **Fuse Holder**
5A (7514M/7514L only)
10A (7513M/7513L only)
⑨ **Right Front (+) Speaker Output Lead (Grey)**
⑩ **Right Front (−) Speaker Output Lead (Grey/Black)**
⑪ **Right Rear (−) Speaker Output Lead (Violet/Black)**
⑫ **Right Rear (+) Speaker Output Lead (Violet)**
⑬ **Left Rear (+) Speaker Output Lead (Green)**
⑭ **Left Rear (−) Speaker Output Lead (Green/Black) (7513M/7513L only)**
⑮ **Left Front (−) Speaker Output Lead (White/Black)**
⑯ **Left Front (+) Speaker Output Lead (White)**
⑰ **DIN Connector**
Connect this to the DIN connector on the CD Shuttle.
⑱ **Rear Output RCA Connectors (7514M/7514L Only)**
RED is right and WHITE is left.
⑲ **RCA Extension Cable (Sold Separately)**
⑳ **DIN Extension Cable**

NOTE:
Connector shape of the DIN Extension cable supplied with the CD Shuttle may be not "L" shape. With this type of cable, connection may be difficult at a certain mounting location. In such a case, please get a 4902_{02} Adaptor (Sold Separately) for easy connection.

7513M/7513L 7514M/7514L	7513M/7513L 7514M/7514L

FEATURES

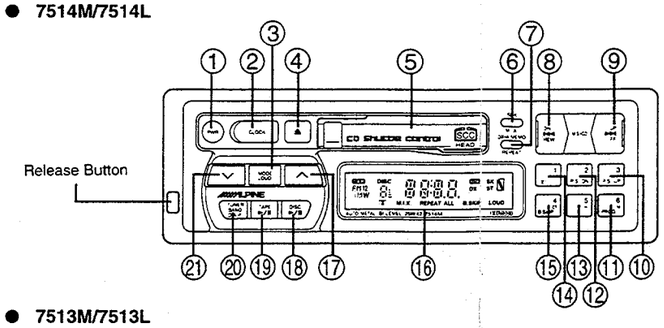
- **FULL FRONT DIN™ CHASSIS**
- **CD Shuttle™ CONTROL**
- **D.F.P. (DETACHABLE FRONT PANEL)**
- **DIGITAL CLOCK**
- **SCC TAPE HEAD™ (7514M/7514L only)**
  The SCC tape head provides an exceptionally flat frequency response.
- **P.S. (PROGRAM SENSOR) (7514M/7514L only)**
  Program Sensor allows skipping up to 9 tracks on the tape in either forward or reverse directions.
- **D.A.P. (DIRECT ACCESS PRESETS)**
- **A. MEMO (INTELLIGENT AUTO MEMORY)**
- **REPEAT (TAPE, CD) (7514M/7514L only)**
- **REPEAT (CD) (7513M/7513L only)**
- **BLANK SKIP (7514M/7514L only)**
- **DOLBY* B NOISE REDUCTION (7514M/7514L only)**
- **S.T.M. (SOURCE TONE MEMORY)**
  Automatically memorizes the settings of your Bass/Treble Controls for each source.
- **LITETOUCH™ 30-STATION PRESETS**
  FM1 : 6, FM2 : 6, MW : 6, LW : 6, D.A.P.: 6
- **PRE-AMP OUTPUT (7514M/7514L only)**
  Pre-amp output, along with a pre-amp fader, make easy and complete system expansion possible.
- **PRESET SCAN (7514L/7513L only)**
  The stations stored in memory preset locations are scanned automatically for ten seconds each.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol (◻◻) are trademarks of Dolby Laboratories Licensing Corporation.

CONTROLS AND INDICATORS

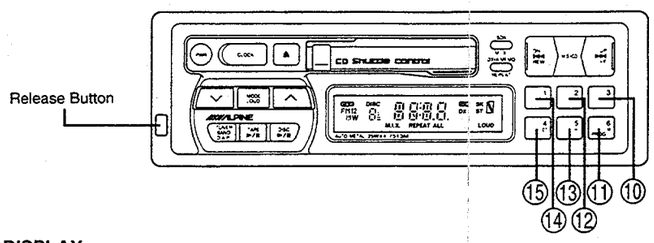
<FRONT PANEL>

- **7514M/7514L**



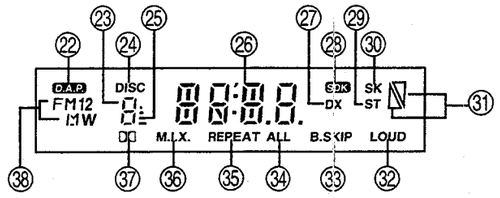
(7514M)

- **7513M/7513L**



(7513M)

<DISPLAY>



(7514M)

CONTROLS AND INDICATORS

FRONT PANEL

① **PoWeR Button**
② **CLOCK Button**
③ **Audio MODE Select Switch/ LOUDness Button**
④ **Eject Button**
⑤ **Cassette Loading Slot**
⑥ **SDK/M.I.X. Play Button (7514M/7513M only)**
⑥ **P. SCAN/M.I.X. Play Button (7514L/7513L only)**
⑦ **DX (Local/Distance)/Auto MEMOry/REPEAT Button**
⑧ **REW/DN Switch (⏮)**
⑨ **FF/UP Switch (⏭)**
⑩ **Preset and Direct Disc Access No. 3 /P.S. UP Button (7514M/7514L only)**
⑩ **Preset and Direct Disc Access No. 3 Button (7513M/7513L only)**
⑪ **Preset and Direct Disc Access No. 6 /PROGram/Minute Button**
⑫ **Preset and Direct Disc Access No. 2 /P.S. DowN Button (7514M/7514L only)**
⑫ **Preset and Direct Disc Access No. 2 Button (7513M/7513L only)**
⑬ **Preset and Direct Disc Access No. 5 /Hour Button**
⑭ **Preset and Direct Disc Access No. 1 /Dolby B NR Button (7514M/7514L only)**
⑭ **Preset and Direct Disc Access No. 1 Button (7513M/7513L only)**
⑮ **Preset and Direct Disc Access No. 4 /Blank SKIP/Clock Time Button (7514M/7514L only)**
⑮ **Preset and Direct Disc Access No. 4 /Clock Time Button (7513M/7513L only)**
⑯ **Display**
⑰ **Audio Up Button**
⑱ **DISC (Play/Pause ▶/II) Button**
⑲ **TAPE (Play/Pause ▶/II) Button**
⑳ **TUNER/BAND/Direct Access Preset Button**
㉑ **Audio Down Button**

DISPLAY

㉒ **D.A.P. Indicator**
㉓ **Preset Channel/Disc Number Indicator**
㉔ **DISC Indicator**
㉕ **Preset Indicator**
㉖ **Digital Display**
㉗ **DX (Distance) Indicator**
㉘ **SDK Indicator (7514M/7513M only)**
㉙ **ST Indicator**
㉚ **SK Indicator (7514M/7513M only)**
㉛ **Tape Direction Indicators**
㉜ **LOUD Indicator**
㉝ **B. SKIP Indicator (7514M/7514L only)**
㉞ **ALL Indicator**
㉟ **REPEAT Indicator**
㊱ **M.I.X. Indicator**
㊲ **Dolby NR Indicator (7514M/7514L only)**
㊳ **Band Indicators**

● BASIC OPERATION

Initial System Start (Bus line reset)

When connecting a changer to an existing system, it is a good idea to reset the bus line from the head unit to make sure the changer is powered up in the proper stand-by state. To do this, press and hold the DISC (▶/II) button ⑱ for at least 3 seconds. Reduce the volume of your system before resetting since a loud noise may occur.

How to adjust the volume and tone (Refer to the diagram on next page.)

1. Turn On the system by pushing the PWR button ① or any other button (other than Eject ④ or CLOCK ②).
2. Press the Audio MODE Select switch ③ to select each adjusting mode.

TRE → BAS → BAL → FAd → VOL

Each time this switch is pressed, the mode changes. The mode is indicated in the display. The mode indicator changes as each mode is selected.

3. While each mode indicator is ON, press the Audio Up button ⑰ or Down button ㉑ 5 seconds after adjusting, the indication returns to VOL. The Audio Up button ⑰ and Audio Down button ㉑ then operate to adjust the volume only.

Power Off

Press the PWR button ① to turn the unit Off.

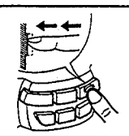
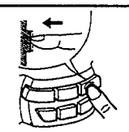
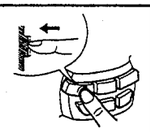
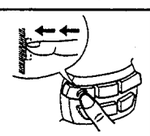
Loudness

1. Press and hold the LOUD button ⑤ for more than 2 seconds to activate the loudness function.
2. Press and hold the LOUD button ⑤ for more than 2 seconds again to defeat this feature.

Mode Switching of the 7514M/7514L/7513M/7513L

1. Radio Mode
   Press the BAND button ⑳ to put the unit into the radio mode. The Band indicator (FM1, FM2 or MW/LW) will appear in the display.
2. Cassette Player Mode
   Press the TAPE button ⑲ to put the unit into the cassette player mode.
3. CD Shuttle Mode
   Press the DISC button ⑱ to put the unit into the CD mode.

Audio UP/DowN Button Operation (7514M/7514L only)

PUSH STROKE	SPEED OF CHANGE	VOLUME	TREBLE	BASS	BALANCE	FADER
	FAST	UP	BOOST	BOOST	Left-ch Decreases	Rear-ch Decreases
	SLOW	UP	BOOST	BOOST	Left-ch Decreases	Rear-ch Decreases
	SLOW	DOWN	CUT	CUT	Right-ch Decreases	Front-ch Decreases
	FAST	DOWN	CUT	CUT	Right-ch Decreases	Front-ch Decreases

(7513M/7513L only)

	VOLUME	TREBLE	BASS	BALANCE	FADER
Audio Up Button ⑰	UP	BOOST	BOOST	Left-ch Decreases	Rear-ch Decreases
Audio Down Button ㉑	DOWN	CUT	CUT	Right-ch Decreases	Front-ch Decreases

S.T.M. (Source Tone Memory)

The Bass and Treble controls can be individually set for each source (FM, MW/LW, Tape, and CD). Once set, their positions are automatically memorized. Whenever the source is reselected, the Bass and Treble controls will return to your preset configuration.

Four preset volume levels can be set for traffic information reception in the SDK mode. (7514M/7513M only)

1. Press the PWR button ① for more than 2 seconds.
2. Press the Preset No. 1 button ⑭ to switch "LV-4" to "LV-1". Select the desired level.

● RADIO OPERATION

Tuning Band Selection

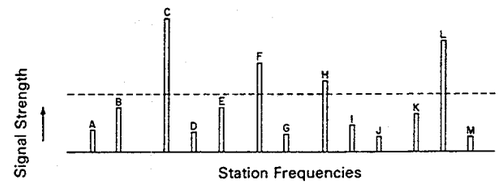
Press the BAND button ⑳ to select the desired tuning band. The Band indicator ㉘ shows your selection.

Local/Distance (DX) Seek Sensitivity for FM, MW and LW

You can select the radio seek sensitivity (local or distance (DX)), by pressing the DX (distance) button ⑦.

In the local mode, with no DX indicator ㉗, the radio tunes in only strong stations (stations C, F, H and L in the illustration).

In the distance mode, with DX indicator ㉗, the radio tunes in both strong and weak stations (all stations from A to M in the illustration).



Manual and Auto Seek Tuning

Stations can be tuned in using the procedures described below.

1. Select the tuning band (FM1, FM2, MW or LW) with the BAND button ⑳. The Band indicator shows your selection.

FM1 → FM2 → MW → LW

2. Decreasing the frequency:
   The frequency is decreased by one step each time the DN switch ⑧ is pressed.
   By pressing and holding the switch for at least 0.5 seconds, the unit will automatically tune the first station it finds in the direction of decreasing frequency.
3. Increasing the frequency:
   The frequency is increased by one step each time the UP switch ⑨ is pressed.
   By pressing and holding the switch for at least 0.5 seconds, the unit will automatically tune to the first station it finds in the direction of increasing frequency.

OPERATION

Preset Memory Programming

Follow the instructions below to program stations into preset memory:

1. Select the tuning band (FM1, FM2, MW or LW) with the BAND button ⑳.
2. Tune in your desired station using manual or auto seek tuning.
3. Press the Preset button number 1 ⑭ for more than 2 seconds.
4. The preset indicator ㉕ and the Digital display ㉖ will begin to blink. Press that Preset button again while the display is blinking (within 5 seconds).
5. The frequency you selected will be placed into preset memory number 1 and will appear in the display.

   NOTE:

   If a preset memory has already been set in the same address, it will be cleared and the new station will be memorized.
6. Follow steps 2 — 4 for the remaining presets (2 — 6). Use this procedure for FM1, FM2, MW and LW.

Preset Scan (7514L/7513L only)

In the radio mode, this feature locates the six radio stations preset in memory on each band (MW/LW, FM1, FM2 or D.A.P.) and plays 10 seconds for each station in numerical order from the Preset No. 1 to No. 6 until the preset scan mode is deactivated. For FM presets it will scan FM1, then FM2 and continue to cycle between these two bands.

When a preset station (No. 1 through No. 6) is being received, pressing the P. SCAN button ⑥ activates the preset scan mode. Scanning begins with the next preset station. The preset scanning continues in order until this mode is deactivated by pressing the P. SCAN button ⑥, one of the Preset buttons (⑩ — ⑮), UP switch ⑨, DN switch ⑧, DISC (▶/II) button ⑱ or TUNER/BAND button ⑳ for a second time.

When a station not stored in the preset scan memory is being received, pressing the P. SCAN button ⑥ activates the preset scan mode and scans starting with "No. 1" on the same band you were receiving.

NOTE:

When the frequency of the preset memory station is weak, the preset scanning moves to the next preset memory station at once.

Auto Memory Preset

1. Select the desired tuning band (FM1, FM2, MW or LW) with the BAND button ⑳. The Band indicator shows your selection.

   NOTE:

   The auto memory preset procedure is allowed in the D.A.P. mode.
2. Press the A. MEMO button ⑦ for over 2 seconds.
3. The tuner will automatically seek the 6 strongest stations in the selected band and memorize them in order of their signal strength. These stations are automatically placed in the preset memory with the strongest station in preset No. 1 and the 6th strongest station in preset No. 6. When seeking stations, the tuner first seeks in the local tuning mode. If less than 6 stations are memorized, the tuner seeks again in the distance (DX) mode.
4. After finishing the auto memory preset, the tuner goes to the station placed in preset memory No. 1. If no stations are memorized, it returns to the original station you were listening to before the auto memory preset procedure began.

NOTE:

The SDK button operation will not be allowed in the Auto Memory mode.

OPERATION

Preset Tuning

After the preset stations have been memorized, you can tune in your desired station (within the band displayed) with one touch of a button.

1. Select the tuning band (FM1, FM2, MW or LW) with the BAND button ⑳.
2. Press any one of the Preset buttons (⑩ — ⑮) and the number of that preset will appear in the preset channel indicator ㉓.
3. The frequency of the station placed in the selected preset location will appear in the display.

D.A.P. (Direct Access Preset)

This feature allows the storage of FM, MW and LW presets on the same band.

1. Press the D.A.P. button ⑳ to light up the D.A.P. indicator ㉒.
2. To program stations into the D.A.P. band, follow steps 1 — 4 as described in the Preset Memory Programming section on page 12.

Accessing the D.A.P. Presets

1. Press the D.A.P. button ⑳. The D.A.P. indicator ㉒ will illuminate in the display.
2. Press one of the Preset buttons (⑩ — ⑮).
3. The frequency of the station placed in the selected D.A.P. location will appear in the display.

Automatic FM Stereo/Monaural Switching

The unit automatically switches from the stereo to monaural mode and the ST indicator ㉙ disappears if the FM signal becomes weak to reduce the noise level. It automatically switches back to the stereo mode when the FM signal becomes strong and the ST indicator ㉙ appears.

OPERATION

Traffic Information Receiving (7514M/7513M only)

This model is equipped with traffic information receiving apparatus to be used in Germany where the traffic information is broadcast in FM. The following is how to use this unit to receive traffic information broadcasting.

1. Select FM position.
2. Depress the SDK button ⑥ and tune to a station. If the station is a traffic information station, the SK indicator ㉚ will glow and show the reception of a broadcast from a traffic information station.

   NOTE: SK Indicator

   When SK signal is received irrespective of the SDK button position, the SK indicator will illuminate.
3. In the SDK mode, stations other than traffic information stations are muted and cut out. Therefore, it is easy to select a traffic information station.
4. As the signal of the tuned traffic information station becomes weak, the SK indicator will extinguish. Then after the lapse of 25 seconds, a rhythmical alarm will sound or another stronger station will be sought automatically depending on the mode selected. If the reception of further traffic information is required, tune in the desired traffic information station. When received, the alarm will stop and the SK indicator illuminates. Since the alarm will continue if no signals from any other traffic stations can be received, release the SDK button for reception of normal broadcasting.
5. When the unit is playing a CD with the SDK button pushed in and tuned to a traffic information station, the CD play is interrupted and changed to FM radio if the pre-tuned station begins a traffic information message. When the message is over, the unit reverts to CD play automatically.
6. If traffic information reception is no longer necessary, release the SDK button for normal radio reception.

NOTE:

When the SDK button is pressed and there is no SK signal, ALARM will sound after the lapse of 25 seconds. Press the SDK button again to stop it.

NOTES:

1. The SDK button operation will not be allowed in the Auto Memory mode.
2. When the Auto Memory function is activated during tape play mode with the SDK indicator ON, "TAPE" will be displayed. But the SDK button operation will not be allowed for the Auto Memory function activated.
   Press the TUNER button to display that the Auto Memory function is ON.

● TAPE PLAYER OPERATION

Turn the unit On and press the TAPE (▶/II) button ⑲ to access the tape mode.

Dolby* B Noise Reduction (7514M/7514L only)
Before playing a cassette tape, check to see if it is encoded with Dolby B noise reduction. Press the Dolby NR button ⑭ when playing a Dolby NR encoded tape.
Press the Dolby NR button ⑭ to select Dolby NR mode. The Dolby NR indicator ㊲ shows your selection. The Dolby NR mode changes each time the button is pressed.

Cassette Loading
1. Insert a prerecorded cassette tape into the cassette loading slot ⑤ with the open side facing to your right.
2. If the cassette tape is not completely loaded into the deck, lightly push the cassette into the slot.

Eject
Press the Eject button ④ to eject the cassette from the tape mechanism.

Pause
To temporarily stop playback, press the TAPE (▶/II) button ⑲. To resume playback, press the same button again.

Playback
1. Insert a prerecorded cassette tape with the open side facing right. The playback begins immediately.
2. If a cassette tape is already loaded in the unit, press the TAPE (▶/II) button ⑲ to start playback.
3. To stop tape play, press the Eject button ④ or turn the power Off with the PWR button ①.

True Fast Forward and Rewind
1. Press the FF switch ⑨ to advance the tape quickly. Press the REW switch ⑧ to rapidly run the tape backward. The deck will perform these functions correctly regardless of the tape play direction.
2. To disengage the FF or REW function, press the TAPE (▶/II) button ⑲.

Program Sensor (7514M/7514L only)
1. To advance the tape to the beginning of the next musical track, press and release the P.S. UP button ⑩. The display will be shown below. Successive pressing of this button will increase the number of tracks to be skipped as the tape advances. The number in the display will increase accordingly. For example, to go from track 1 to track 4, press the P.S. UP button ⑩ three times (the number in the display will be shown below). The tape deck searches for blank sections between tracks to the beginning of track 4 and begins playback.

2. To access the beginning of the current musical track, press and release the P.S. DN button ⑫. The display will be shown below. Successive pressing of this button will increase the number of tracks to be skipped as the tape rewinds. The number in the display will increase (in the negative direction) accordingly. For example, to go from track 5 to track 4, press the P.S. DN button ⑫ twice (the number in the display will be shown below). The tape deck searches for blank sections between tracks to the beginning of the track 4 and begins playback.

[Example]

PS +1	PS –2

NOTE:
The P.S. cannot detect blank sections of less than 3 seconds.

Auto Reverse
When the tape is played or fast-forwarded to the end, the tape transport automatically reverses the tape direction and playback begins.

Manual Reverse
To manually change playback direction (switch between side A and side B), press the PROG button ⑪.

Repeat (7514M/7514L only)
1. Insert the cassette tape and begin playback.
2. When you find a selection you would like to repeat, press the REPEAT button ⑦ until the REPEAT indicator appear in the display. This selection will be continuously repeated until the repeat function is disengaged.
3. To cancel the repeat function, press the REPEAT button ⑦ again. The REPEAT indicator will disappear.

Blank Skip (7514M/7514L only)
1. Press the B. SKIP button ⑮ during playback to skip over any blank sections of tape lasting 15 seconds or more.
2. To cancel the blank skip function, press the B. SKIP button ⑮ again.

Head Cleaning
When playback sound quality begins to deteriorate, it is time to clean the tape head. Insert a special head cleaning cassette into the tape deck and allow it to run for approximately 1 minute to remove any foreign matter. There are special cleaning cassettes that also clean the capstans and pinch rollers. Please contact your authorized Alpine dealer for information about these cleaning devices.

● CD OPERATION

The following instructions apply only to systems that incorporate the Alpine CD Shuttle with 7514M/7514L/7513M/7513L.

Turn the unit On and access the CD mode by pressing the DISC (▶/II) button ⑱.

Normal Play
1. Press the DISC (▶/II) button ⑱.
2. The first disc will begin playback.
3. After the last track on the last disc is played back, the pickup will return to the beginning of the first track of the first disc and begin playback from that point.

Pause
While the disc is playing, press the DISC (▶/II) button ⑱ to temporarily stop playback. The Digital display ㉖ will show "PAU". To resume playback, press the DISC button (▶/II) ⑱ again.

Music Sensor (Skip)
This feature allows you to access the beginning of your musical track selection simply and quickly. It is functional in the play or pause mode. The track No. Indicator shows the track number you have selected.

- To advance to the next track on the disc, press the FF/UP switch ⑨.

1. Playback stops, and the pickup moves up to the beginning of the next track. That track number appears in the track No. indicator.
2. Playback begins immediately.
3. If you wish to access a track further ahead on the disc, continue pressing and releasing the FF/UP switch ⑨ until you reach the track of your choice.

- To replay the track that is currently playing, press and release the REW/DN switch ⑧.

1. Playback stops, and the pickup moves back to the beginning of the current track. The track number in the track No. indicator remains the same.
2. Playback begins immediately from the beginning of the track.
3. To access a track further towards the beginning of the disc, continue pressing and releasing the REW/DN switch ⑧ until you reach the track of your choice.

Direct Disc Access
1. Press one of the Direct Disc Access buttons (⑩ — ⑮) to select from discs 1 — 6. The disc and track numbers will appear in the display.
2. Press the FF/UP ⑨ or REW/DN ⑧ switch for musical track selection.

OPERATION

Fast Forward/Fast Backward

The fast forward/fast backward feature works in the play mode only.

1. Press either the FF ⑨ or the REW ⑧ switch and hold it down for more than 1 second.
2. To move the pickup forward rapidly, hold down the FF switch ⑨.
3. To move the pickup backward rapidly, hold down the REW switch ⑧.
4. Release the switch when you get to the desired position on the disc.
5. When the pickup reaches the end of the disc, it will begin playback from the beginning of the first track on the next disc.

Repeat (One/All)

This feature allows you to continuously repeat a single track or one entire disc.

To Repeat a Single Track

1. Locate the music track of your choice using the UP ⑨ or DN ⑧ switch.
2. Press the REPEAT button ⑦.
   The REPEAT indicator ㉕ will illuminate on the Digital display ㉖.
   The music track will be played back repeatedly.
3. To stop repeat play, press the REPEAT button ⑦ twice.

To Repeat an Entire Disc

1. While playing a disc, press the REPEAT button ⑦ until the ALL indicator ㉔ will illuminate.
2. The disc will be played back repeatedly.
3. To stop repeat play, press the REPEAT button ⑦ once. The indicator illumination will be off.

M.I.X. (Random Play)

Press the M.I.X. button ⑥ (for more than 2 seconds: 7514L/7513L only) while the unit is in the play or pause mode. Musical tracks on the selected disc will be played back in a random sequence generated by the microprocessor. After all the tracks on the disc have been played back once, the player will begin a new random sequence.

OPERATION

● **CLOCK OPERATION**

To display Clock Indication

1. Press the CLOCK button ②. The display will indicate the clock indication.

NOTE:

If the unit power is off. The unit shows the clock time unless the vehicle's ignition switch is not off.

2. To turn off the clock indication, press the CLOCK button ② again.

Clock display priority function

When the clock time is being displayed, the unit is set to the "Clock display priority mode".

When an operation of FM, MW, LW, Cassette, etc. is conducted, that operation mode is once indicated on the display, but the clock indication is automatically resumed after 5 seconds.

Setting the Time

1. Press and hold the CLOCK button ② for at least 3 seconds to enable the time adjust mode. The time display will blink when ready for setting.
2. Adjusting the hours:
   Use Hour button ⑬ to adjust the hours.
3. Adjusting the minutes:
   Use Minute button ⑪ to adjust the minutes.
4. Initializing the minutes and seconds:
   Pressing Clock Time button ⑮ will set the minutes and seconds to zero.

OPERATION

● **Handling the Detachable Front Panel**

Removal

1. Press the PWR button ① to turn the power off.
2. Press the Release button. (Fig. 2)
3. The detachable front panel pops out. Grasp part of it and pull it off. (Fig. 3)

NOTE:

After removing the detachable front panel, place it in the included case and protect it from strong shocks and dirt.

Installation

1. Check that there is no dirt, etc., in the grooves on the ends of the detachable unit. Insert the right side of the detachable panel first, as shown in Fig. 4.
2. Press on the detachable front panel at a point other than the button surface on the left side until a click is heard. (Fig. 5)
3. Touch the detachable front panel and check that it is securely fastened.

NOTE:

Be sure to check that there is no dirt, dust, etc., on the connector terminals for the detachable face and unit before installing it.

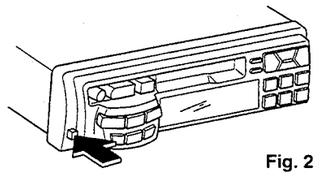


Fig. 2

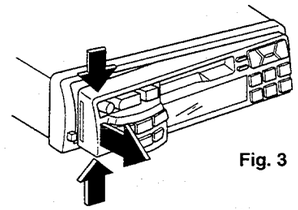


Fig. 3

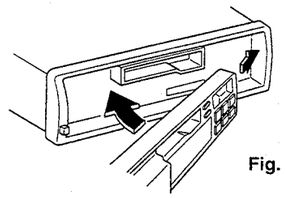


Fig. 4

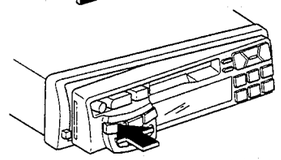
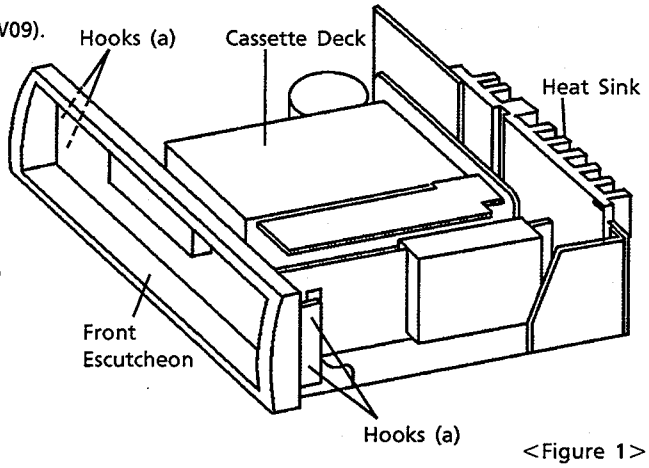


Fig. 5

Disassembly Instructions

1. Removal of Nose Unit

(1) Refer to the Owner's Manual (Part No. 68P50390W09).



<Figure 1>

2. Removal of Front Escutcheon

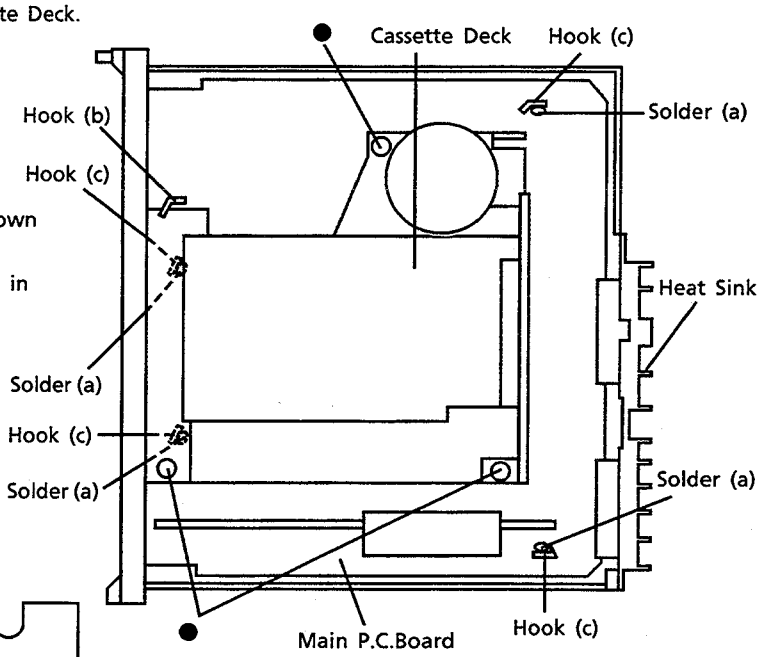
(1) After removal of Top Cover, remove the Hooks (a) as shown in Figure 1.

3. Removal of Cassette Deck

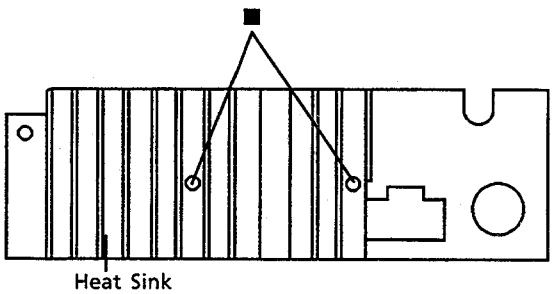
(1) Remove the Hook (b) as shown in Figure 2.
(2) Remove three screws marked "●" as shown in Figure 2.
(3) Disconnect one Connector from the Cassette Deck.

4. Removal of Main P.C.Board

(1) Remove the Solder (a) and Hook (c) as shown in Figure 2.
(2) Remove two screws marked "■" as shown in Figure 3.
(3) Disconnect two Connectors from the Main P.C.Board.



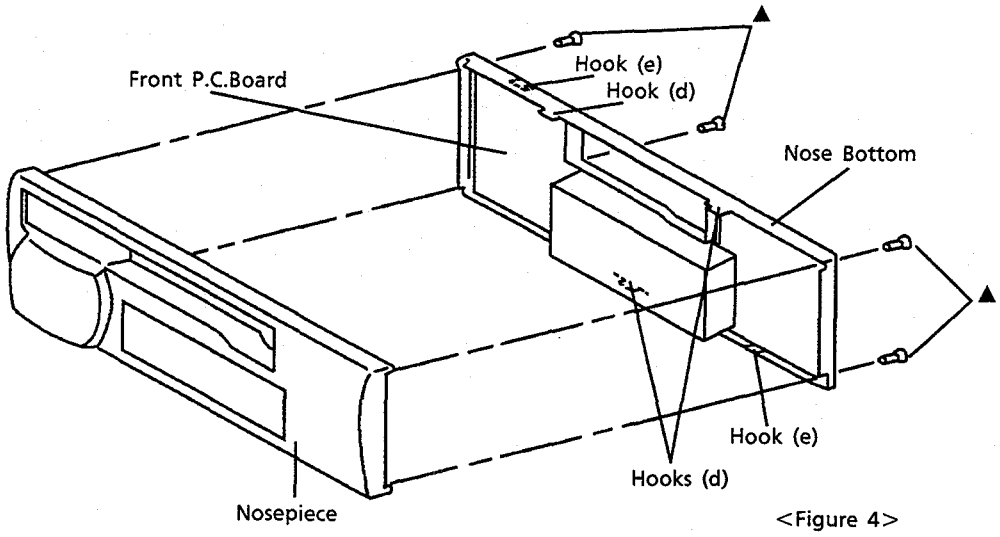
<Figure 2>



<Figure 3>

5. Removal of Front P.C.Board

(1) After removal of Nose Unit, remove four screws marked "▲" and the Hooks (d) as shown in Figure 4.
(2) Remove the Hooks (e) as shown in Figure 4.



<Figure 4>

Adjustment Procedures

1 FM SECTION

(1) Dummy Antenna Circuit

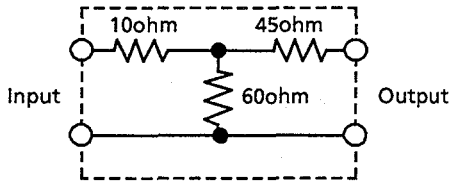


Figure 5

(2) Connections

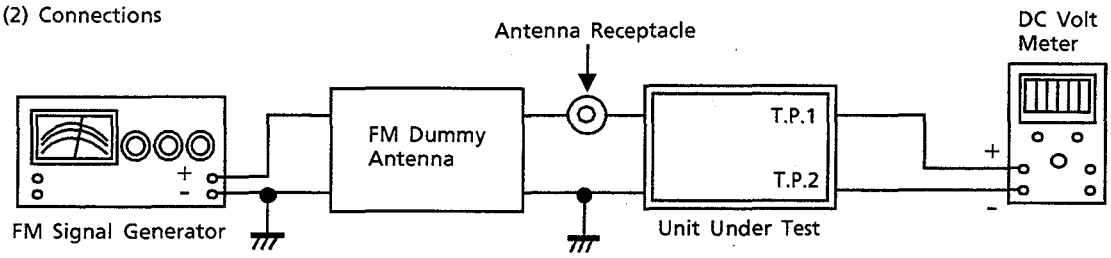


Figure 6

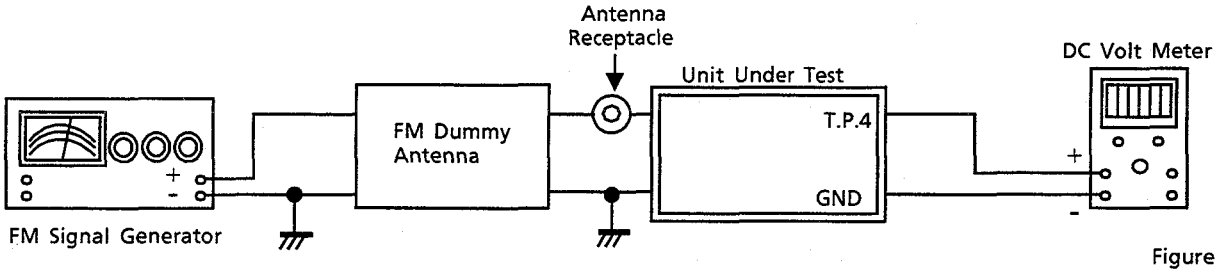


Figure 7

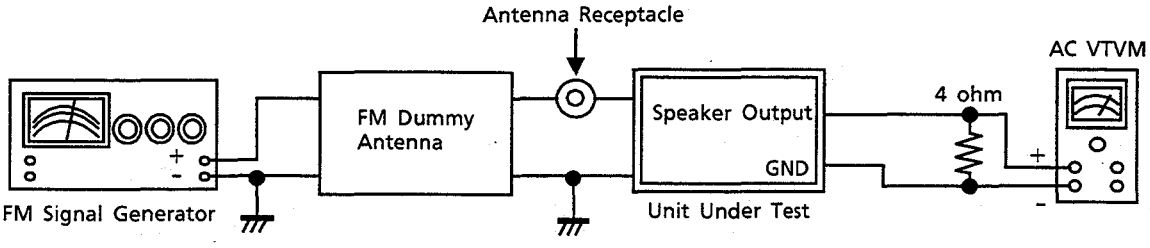


Figure 8

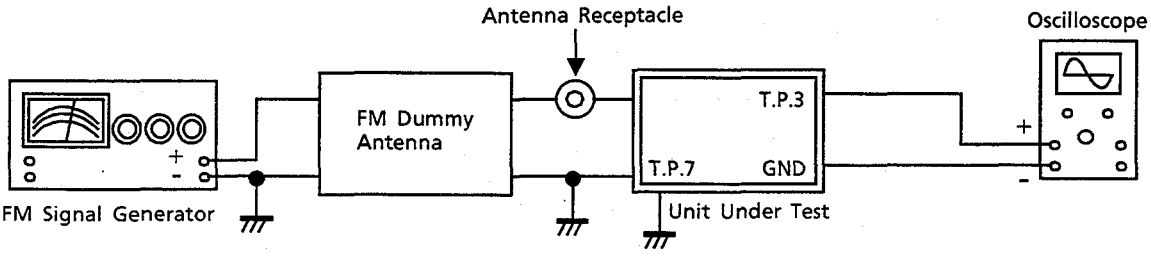


Figure 9

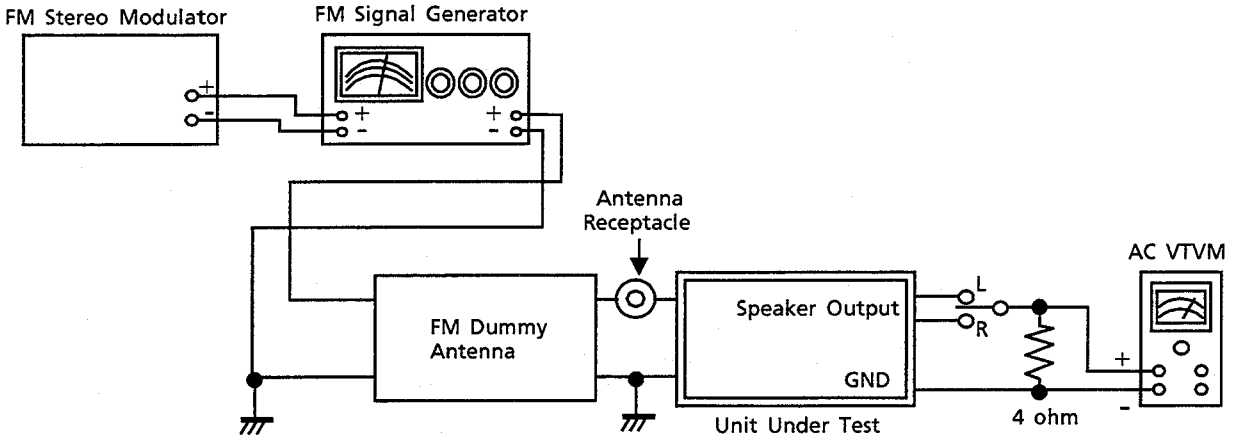


Figure 10

(3) Control Settings

Power Switch	ON
Fader Control	Center Position
Balance Control	Center Position
Treble / Bass Control	Center Position
Band Switch	FM
Others	OFF

(4) Adjustment Procedures

Step	Description		Connection	Signal Generator	Dial Control	Test Point	Adjustment
1	IF Adjustment		Figure 6	98.1MHz, 72dB (Mod. OFF)	98.1MHz	T.P.1 T.P.2	Adjust L2101 to 0±15mV.
2	Signal Meter Adjustment		Figure 7	98.1MHz, 46dB (Mod. 400Hz)	98.1MHz	T.P.4	Adjust VR2101 to 2.9±0.1V.
3	Noise Level Adjustment	(1)	Figure 8	98.1MHz, 72dB (Mod. 400Hz)	98.1MHz	Speaker Output	Adjust VOLUME to obtain 2V output. This value is 0dB.
		(2)	Figure 8	98.1MHz, - 19dB (Mod. 400Hz)	98.1MHz	Speaker Output	Adjust VR2106 to -30±5dB output at SG level minimum.
4	Seek Stop Adjustment		Figure 9	98.1MHz, 26dB (Mod. OFF)	98.1MHz	T.P.3	Adjust VR2105 to obtain 27±5dB.
5	Stereo Separation Adjustment (Lch)		Figure 10	98.1MHz, 72dB (Stereo 1kHz, Lch only)	98.1MHz	Speaker Output	Adjust VR2104 for Rch output to be minimum and confirm Lch and Rch output level difference is more than 20dB.

Step	Description	Connection	Signal Generator	Dial Control	Test Point	Adjustment
6	Stereo Blend Adjustment (Lch)	Figure 10	98.1MHz, 46dB (Stereo 1kHz, Lch only)	98.1MHz	Speaker Output	Adjust VR2102 for Lch and Rch output level difference to be 8dB.
7	Stereo Separation Adjustment (Rch)	Figure 10	98.1MHz, 72dB (Stereo 1kHz, Rch only)	98.1MHz	Speaker Output	Proceed same adjustment under step 5 by alternating Lch and Rch.
8	Stereo Blend Adjustment (Rch)	Figure 10	98.1MHz, 46dB (Stereo 1kHz, Rch only)	98.1MHz	Speaker Output	Proceed same adjustment under step 6.

2 SDK SECTION (7513M / 7514M Model Only)

(1) Dummy Antenna Circuit

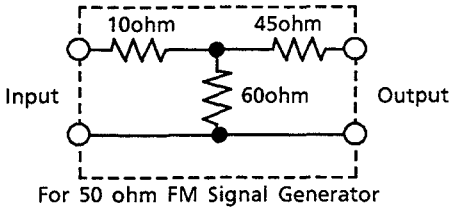


Figure 11

(2) Connections

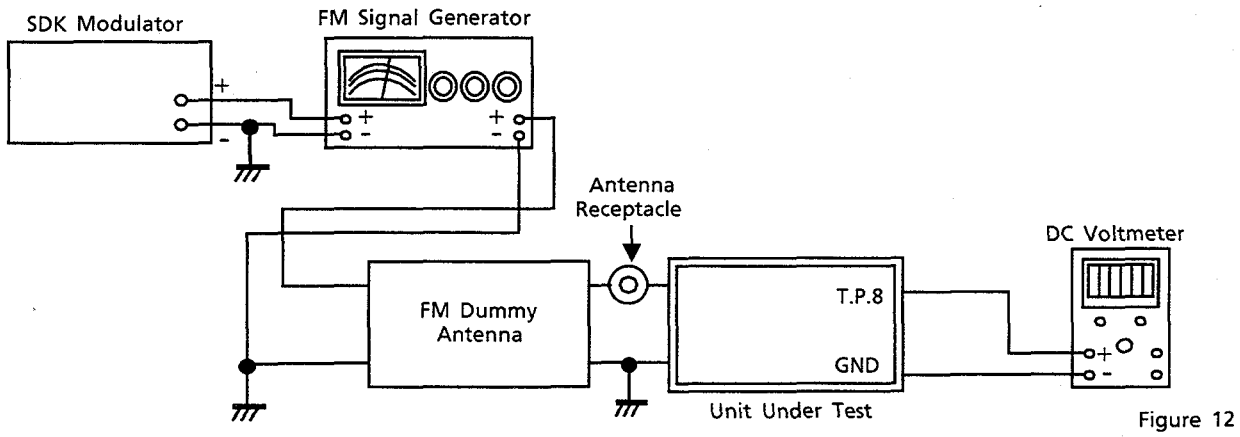


Figure 12

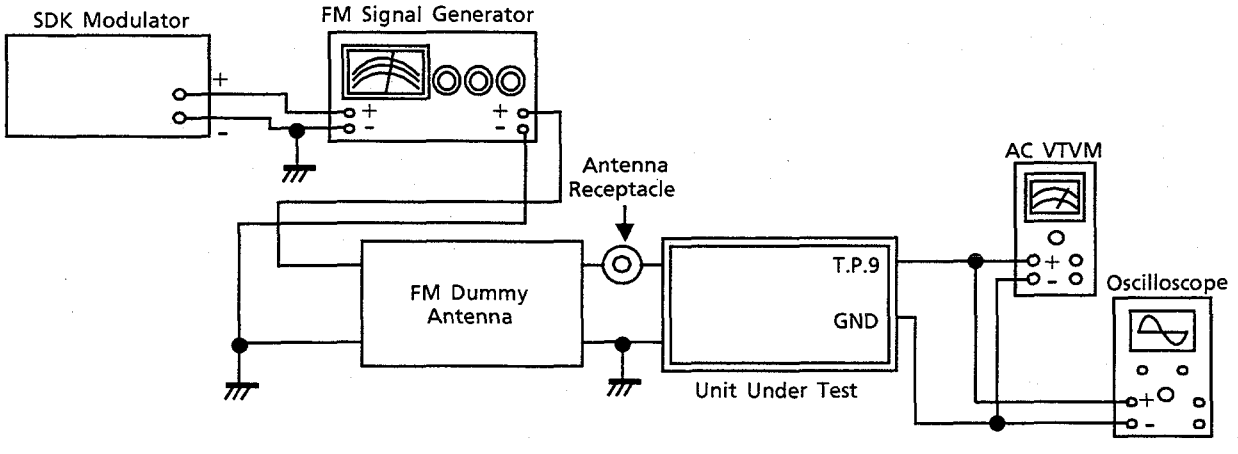


Figure 13

(2) Control Settings

Power Switch ..... ON
Band Select Switch ..... SDK
Balance Control ..... Center Position
Treble / Bass Control ..... Center Position
Fader Control ..... Center Position
Others ..... OFF

(3) Adjustment Procedures

Step	Description	Connection	Signal Generator	Dial Control	Test Point	Adjustment
1	SK Adjustment	Figure 12	98.1MHz, 21dB (SK, BK : ON, DK : OFF) (Mod. 400Hz, Dev. 40kHz)	98.1MHz	T.P.8	L501 for Maximum Output.
2	DK Adjustment	Figure 13	98.1MHz, 21dB (SK, BK, DK : ON) (Mod. 400Hz, Dev. 40kHz)	98.1MHz	T.P.9	VR501 for Maximum Output.

3 TAPE PLAYER SECTION

(1) Connections

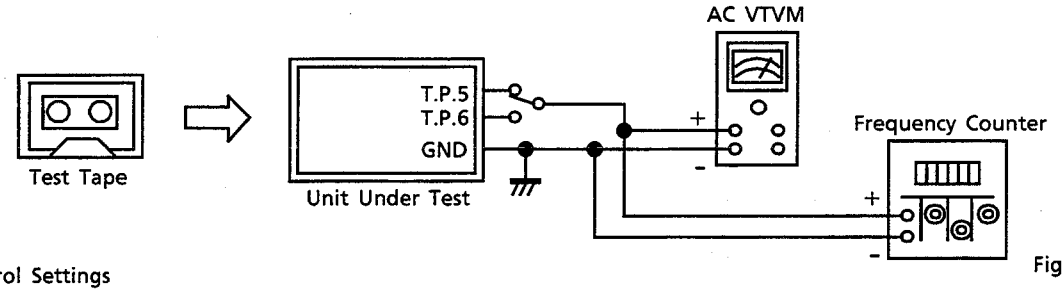


Figure 14

(2) Control Settings

Power Switch ..... ON
Fader Control ..... Center Position
Balance Control ..... Center Position
Treble / Bass Control ..... Center Position
Others ..... OFF

(3) Adjustment Procedures

Step	Description	Test Tape	Connection	Test Point	Adjustment Point	Adjustment
1	Head Azimuth Adjustment	MTT - 114NB (14kHz)	Figure 14	T.P.5 (Lch) T.P.6 (Rch)	Head Azimuth Adjustment Screws (Figure 15)	Adjust for Max. and same level output at Normal and Reverse positions.
2	Dolby Level Adjustment (7514M / 7514L Model Only)	MTT - 150 (400Hz)	Figure 14	T.P.5 (Lch) T.P.6 (Rch)	VR101 (Lch) VR102 (Rch)	Adjust for 245mV at T.P.5 (Lch) and T.P.6 (Rch).
3	Tape Speed Adjustment	MTT - 111N (3kHz)	Figure 14	T.P.5 (Lch) or T.P.6 (Rch)	Tape Speed Adjustment (Figure 16)	Adjust for 2,970 to 3,090Hz at T.P.5 (T.P.6).

Adjustment Locations

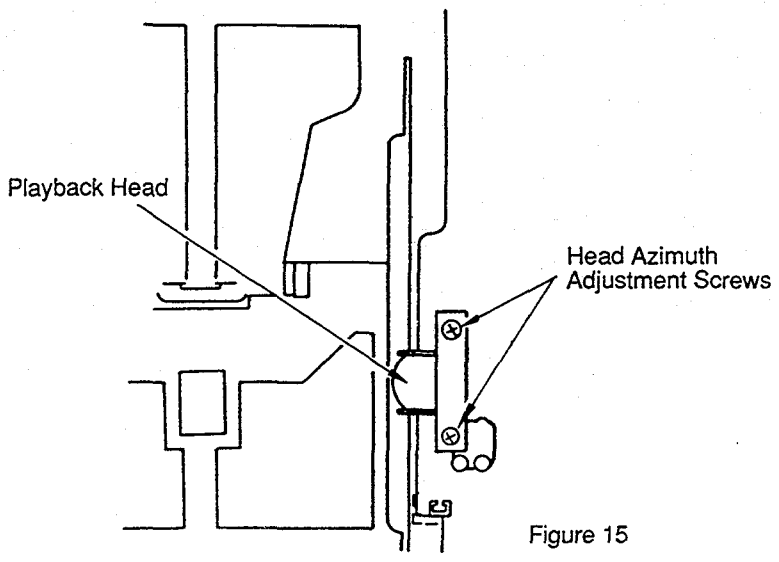


Figure 15

7513M/7513L Model Only

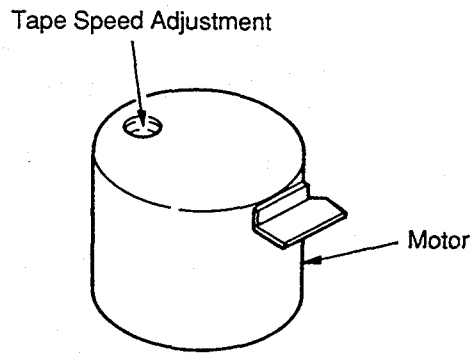


Figure 16

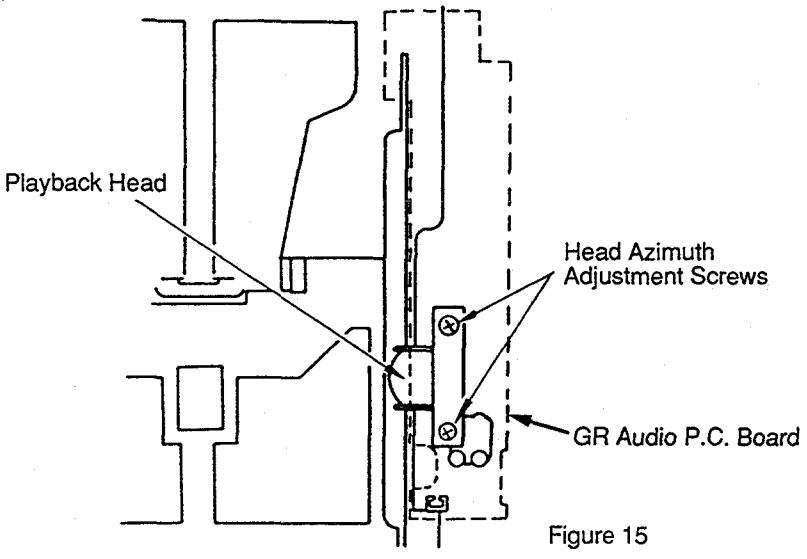
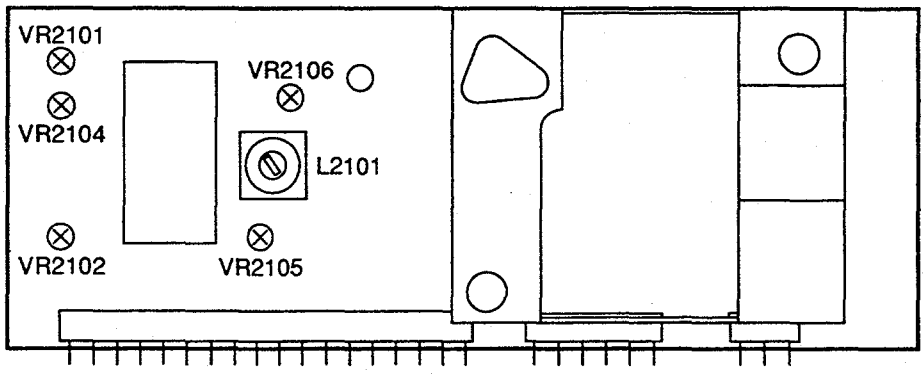
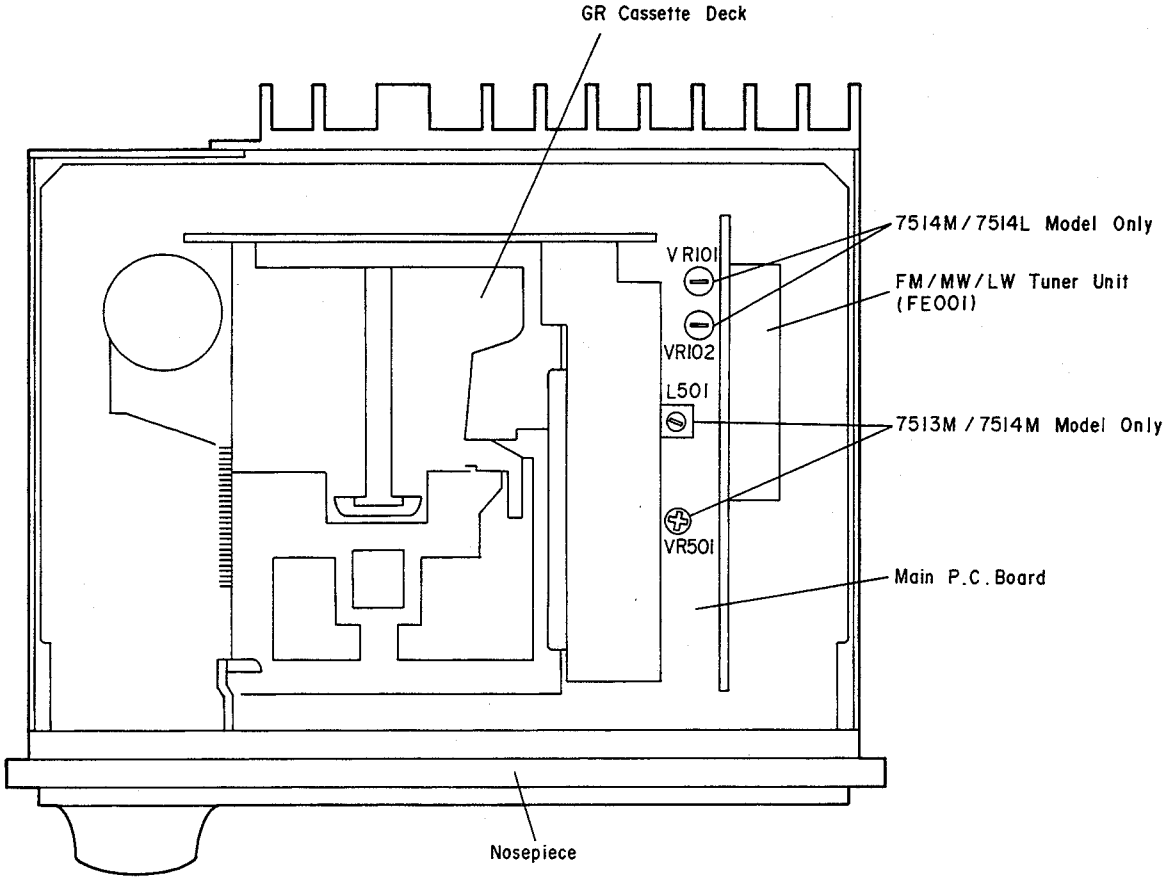


Figure 15

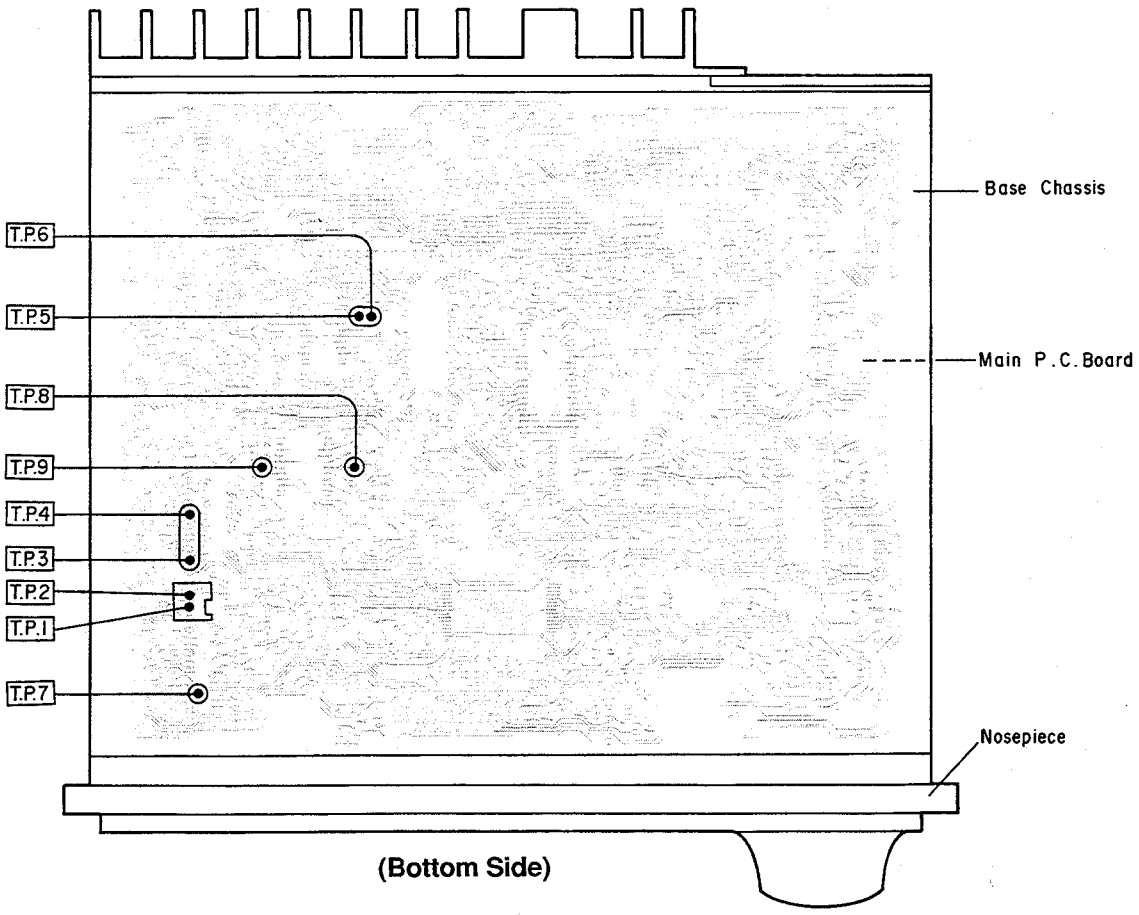
7514M/7514L Model Only



FM/MW/LW Tuner Unit (FE001)

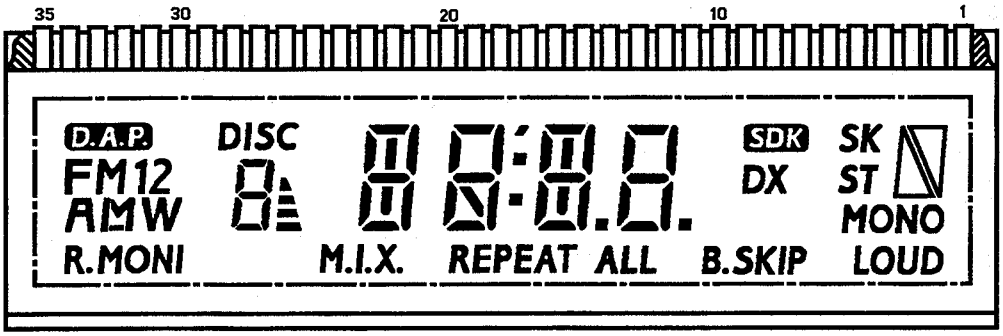


(Top Side)

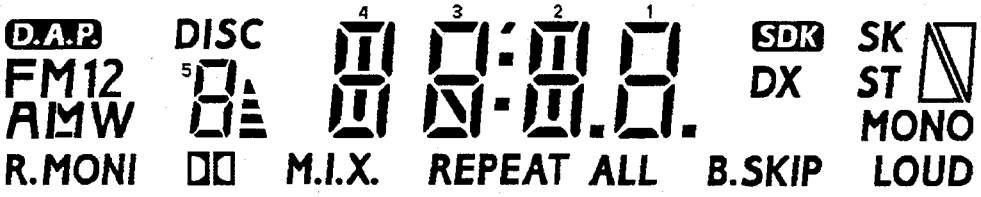


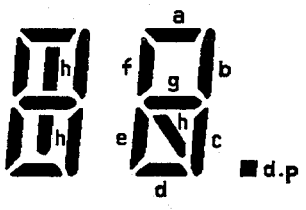
(Bottom Side)

LCD Display



Pin No.	1	2	3	4	5	6	7	8	9	10	11
COM1	COM1		▽	LOUD	ST	ALL	B. SKIP	SDK	1d	1g	1a
COM2		COM2	△	MONO	SK	REPEAT	1d.p	DX	1c	1f	1b
Pin No.	12	13	14	15	16	17	18	19	20	21	22
COM1	2d.p	2d	2c	2b	2g	■	3h	3a	3g	3d	4b
COM2	1e	2e	2h	2a	2f	▰	3c	3b	3f	3e	4a
Pin No.	23	24	25	26	27	28	29	30	31	32	33
COM1	4c	4g	4d	M.I.X.	▣	5f	5g	5e	R.MONI	1	FM
COM2	4h	4f	4e	≡	5a, d	DISC	5b	5c	W	2	D.A.P.
Pin No.	34	35									
COM1											
COM2	A										





Description of IC Terminals

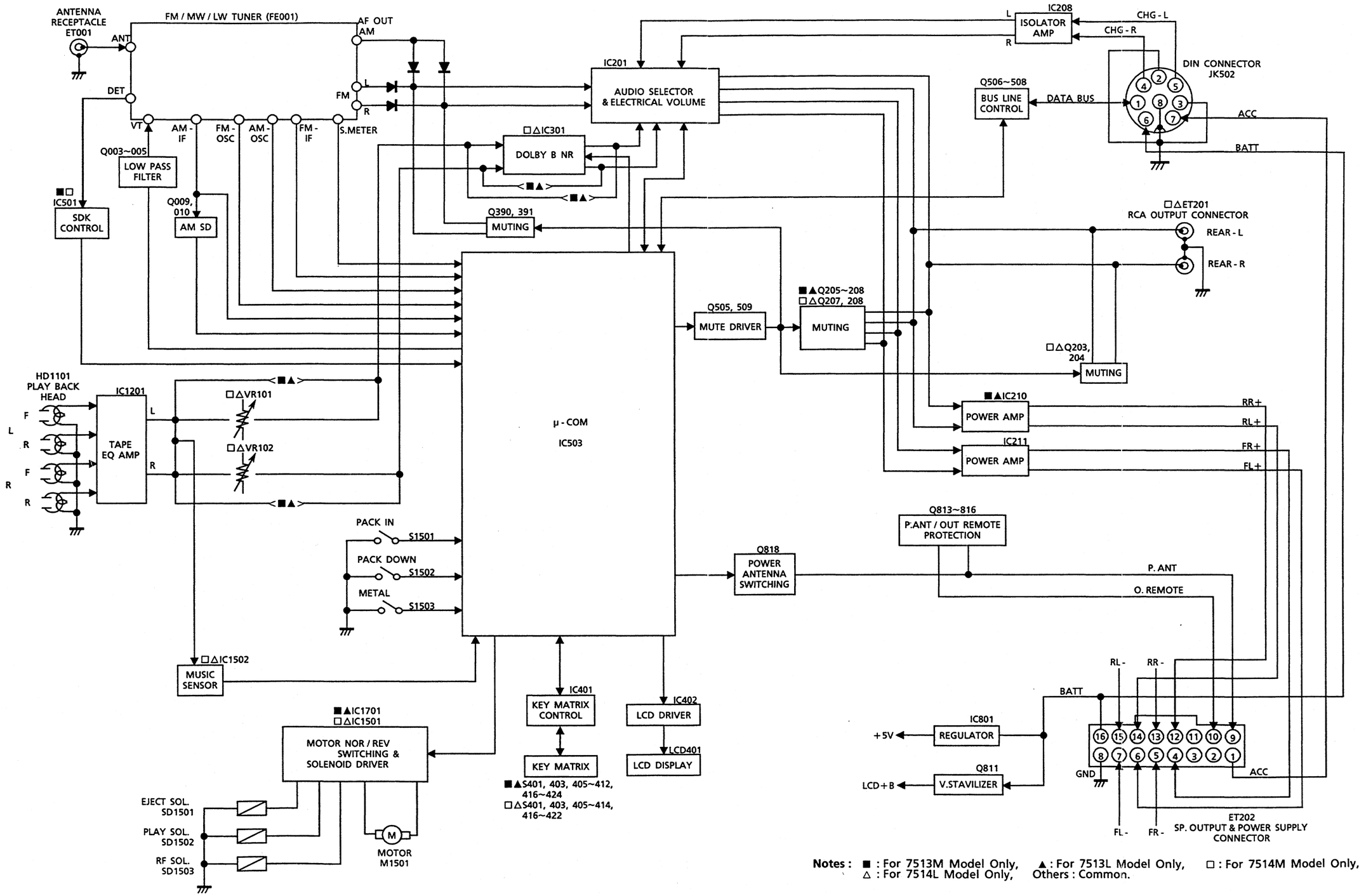
55359W02 (IC503)

No.	Symbol	I / O	Terminal Description
1	KEY IN	I	Key matrix signal input terminal.
2	$\overline{ST}$	I	Stereo signal input terminal.
3	EV DATA	I / O	Serial data in / output terminal for electrical volume.
4	EV CLK	O	Clock output terminal for electrical volume.
5	SK	I	SK signal input terminal.
6	DK	I	DK signal input terminal.
7	$\overline{DOLBY\ B}$	O	Dolby B NR. ON signal outptu terminal.
8	GND	—	Ground terminal.
9	GND	—	Ground terminal.
10	CHG. D. OUT	O	CD Changer bus line data output terminal.
11	CHG. D. IN	I	CD Changer bus line data input terminal.
12	ACC	I	ACC power supply detection terminal.
13	BATT	I	Battery power supply detection terminal.
14	PACK DOWN	I	Switch to detect cassette holder is moved down completely.
15	RUN DET	I	Signal showing take-up reel is rotaring or not.
16	PACK IN	I	Switch to defect cassette is installed into cassette holder or not.
17	MS DET	I	Music Sensor defection signal developed by MS-IC.
18	PLAY SOL	O	Attracts PLAY SOL. and maintains HEAD BASE moved for ward.
19	RF SOL	O	Sets FF, REW, CUE or REV mode by pulling RF SOL. so that PINCH ROLLER is retracted from capastan shaft.
20	MOTOR CONT	O	Determines rotation direction of motor in GR mechanism.
21	ALARM	O	Alarm signal output terminal.
22	EJ SOL	O	Performs EJECT operation by pulling EJECT SOL. to engage EJECT GEARS and to rotate motor in clockwise direction.
23	O. MOTOR	O	Determines start and stop of the motor in GR mechanism.
24	F / $\overline{R}$	O	Determines running direction of tape depending upon rotation direction of motor. This signal is used to switch running direction and PRE AMP EQ circuit.
25	LEV. O FAST	O	Signal to vary gain when judging blank space between programs in MS-IC because of different signal levels in PLAY and CUE & REV.
26	FM IF	I	FM IF input terminal.
27	AM IF	I	AM IF input terminal.
28	SD	I	Station detector signal input terminal for FM / AM.
29	S METER	I	Signal meter input terminal.
30	V_{DD1}	—	Power supply terminal.
31	AM OSC	I	AM OSC input terminal.

No.	Symbol	I / O	Terminal Description
32	FM OSC	I	FM OSC input terminal.
33	GND	—	Ground terminal.
34	X OUT	O	Ceramic terminal for system clock OSC.
35	X IN	I	Ceramic terminal for system clock OSC.
36	EO	O	PLL error output terminal.
37	NC	—	No connection.
38	NC	—	No connection.
39	NC	—	No connection.
40	NC	—	No connection.
41	V_{DD2}	—	Power supply terminal.
42	NC	—	No connection.
43	NC	—	No connection.
44	NC	—	No connection.
45	L / $\overline{D}$	O	Local / DX switching output terminal.
46	LW	O	LW band selection terminal.
47	$\overline{REQ}$	O	Low level output during auto tuning.
48	$\overline{LW}$	O	LW band selection terminal.
49	FM / $\overline{AM}$	O	FM / AM (MW / LW) bands selection terminal.
50	NC	—	No connection.
51	NC	—	No connection.
52	NC	—	No connection.
53	NC	—	No connection.
54	$\overline{LCD\ INH}$	O	Lights out signal output terminal to LCD driver.
55	LCD CE	O	Serial data sync signal output terminal to LCD driver.
56	LCD DATA	O	Serial data output terminal to LCD driver.
57	LCD CLK	O	Communication sync signal output terminal to LCD driver.
58	KEY P / $\overline{S}$	O	Parallel / Serial setting output terminal for shift register used to read key matrix.
59	NC	—	No connection.
60	NC	—	No connection.
61	NC	—	No connection.
62	NC	—	No connection.
63	NC	—	No connection.
64	NC	—	No connection.
65	NC	—	No connection.

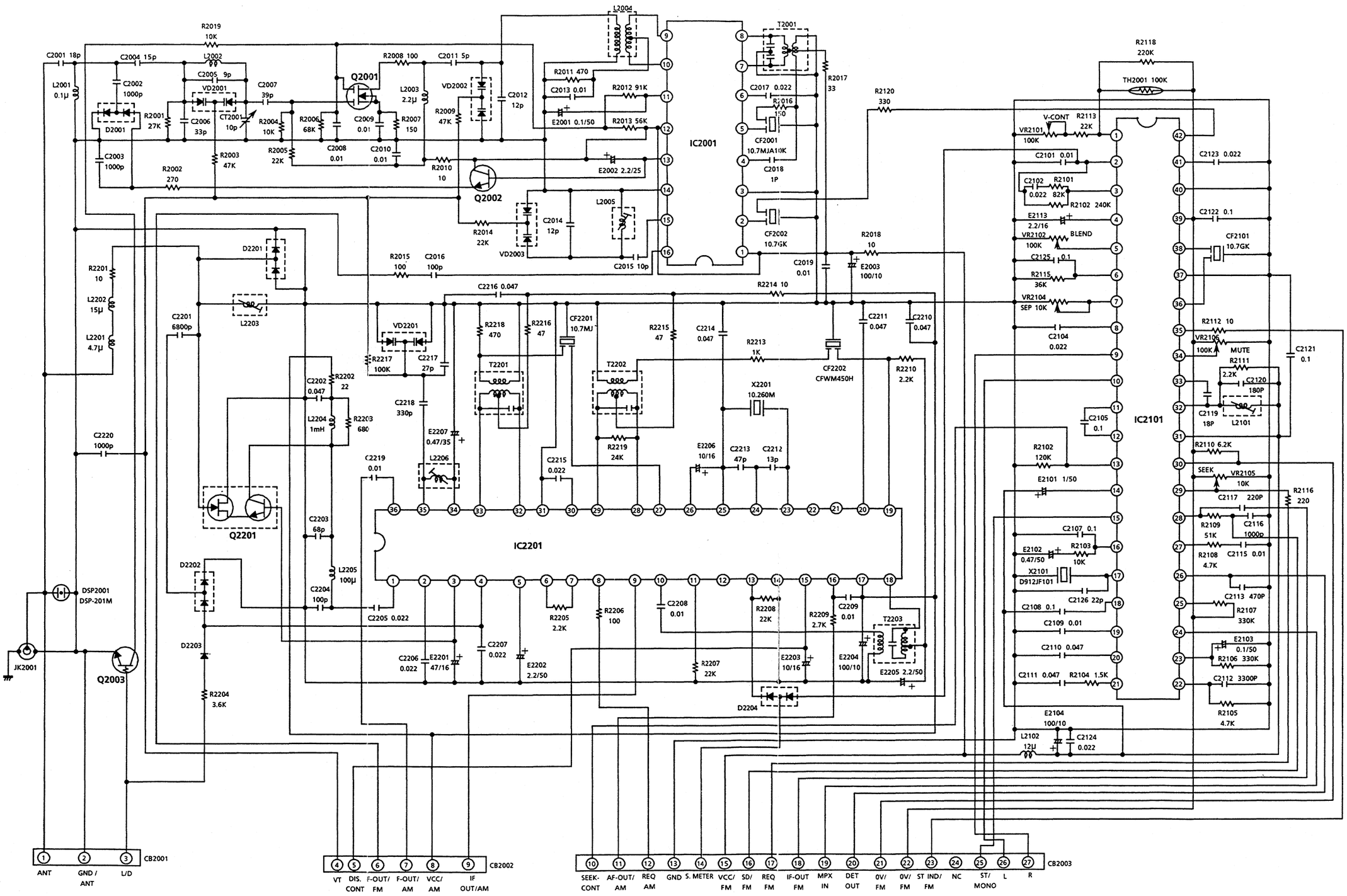
No.	Symbol	I / O	Terminal Description
66	NC	—	No connection.
67	P. ANT	O	Power antenna switching output terminal.
68	LCD+B ON	O	LCD+B switching output terminal.
69	NOSE P.	O	Power supply control terminal for Front panel.
70	$\overline{\text{MUTE}}$	O	Audio mute signal output terminal.
71	POWER IC ON	O	Power IC stand by control terminal.
72	POWER CONT	O	System power supply control terminal.
73	NC	—	No connection.
74	NC	—	No connection.
75	$\overline{\text{NOSE ON}}$	I	Front panel detection terminal.
76	MODEL 1	I	7513 / 7514 set up terminal.
77	MODEL 0 / AREA 1	I	Area set up terminal.
78	AREA 0	I	Area (M / L) set up terminal.
79	GND	—	Ground terminal.
80	GND	—	Ground terminal.

Block Diagram



Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only, △ : For 7514L Model Only, Others : Common.

Tuner Schematic Diagram



Parts Layout on P.C. Boards and Wiring Diagram (1/2)

1

2

3

4

5

RCA Output Connector
(●◇□△ET201)

REAR-R (RED) REAR-L (WHT)
BLK BLK
SHLD RED(R) WHT(L) SHLD
To CB201

From GR Control P.C.Board
(■▲○ CB1701 , ●◇□△CB1501)
To CB101

Main P.C.Board (Component Side View)

JK502 ET202 IC211 IC210 D202 D203 D501 D803 D206 D209 D205 D208 R276 C217 D207 D101 VR101 VR102 VR103 FE001 E005 R016 E006 L501 E501 E502 E503 E504 C501 C502 C503 C504 C505 C506 C507 C508 C509 C513 VR501 R030 T.P.1 T.P.2 T.P.3 T.P.4 T.P.5 T.P.6 T.P.7 T.P.8 T.P.9 R202 R304 R305 R306 E807 Q816 Z0803 R830 R821 R822 R823 R825 E804 E803 Z0506 D504 E507 R550 E506 E232 E231 E203 E201 E202 E390 E204 E205 C205 C206 ZD502 ZD501 R225 E809 E225 E227 E228 D801 D899 ZD804 S501 R561 R560 R104 R105 E101 Q807 Q806 R811 R810 R817 E999 ZD801 Q811 Q804 E801 ZD805 R420 L502 R590 X501 E520 Q801 Q802 E003 E004 C521 (BP) C001 R012 R549 R548 R547 R546 R545 R544 R543 E235 E236 E237 E238 E239 E240 E241 E242 E243 E244 E245 E246 E247 E248 C218 C219 C220 D204 C214 C215 C216 D201 E308 E307 E309 E303 E304 E301 E302 E398 E399 E306 E305 E391 R202 C213 E001 E002 E003 E004 E005 E006 E007 E008 E009 E010 E011 E012 E013 E014 E015 E016 E017 E018 E019 E020 E021 E022 E023 E024 E025 E026 E027 E028 E029 E030 E031 E032 E033 E034 E035 E036 E037 E038 E039 E040

iagram (1/2)

From GR Control P.C.Board
(■▲○ CBI701, ●◇□△CBI501)

To CBI01

FM/MW/LW Tuner Unit
(FE001)

From Main P.C.Board (FE001)

WHIT
BLK
SHLD

Antenna Receptacle
(ET001)

Notes:
○ : For 7513 Model Only
● : For 7514 Model Only
◇ : For 7517 Model Only
■ : For 7513M Model Only
▲ : For 7513L Model Only
□ : For 7514M Model Only
△ : For 7514L Model Only
Others: Common

YEL

To CB401

t P.C.Board (CH401)

Main P.C.Board (Foil Side View)

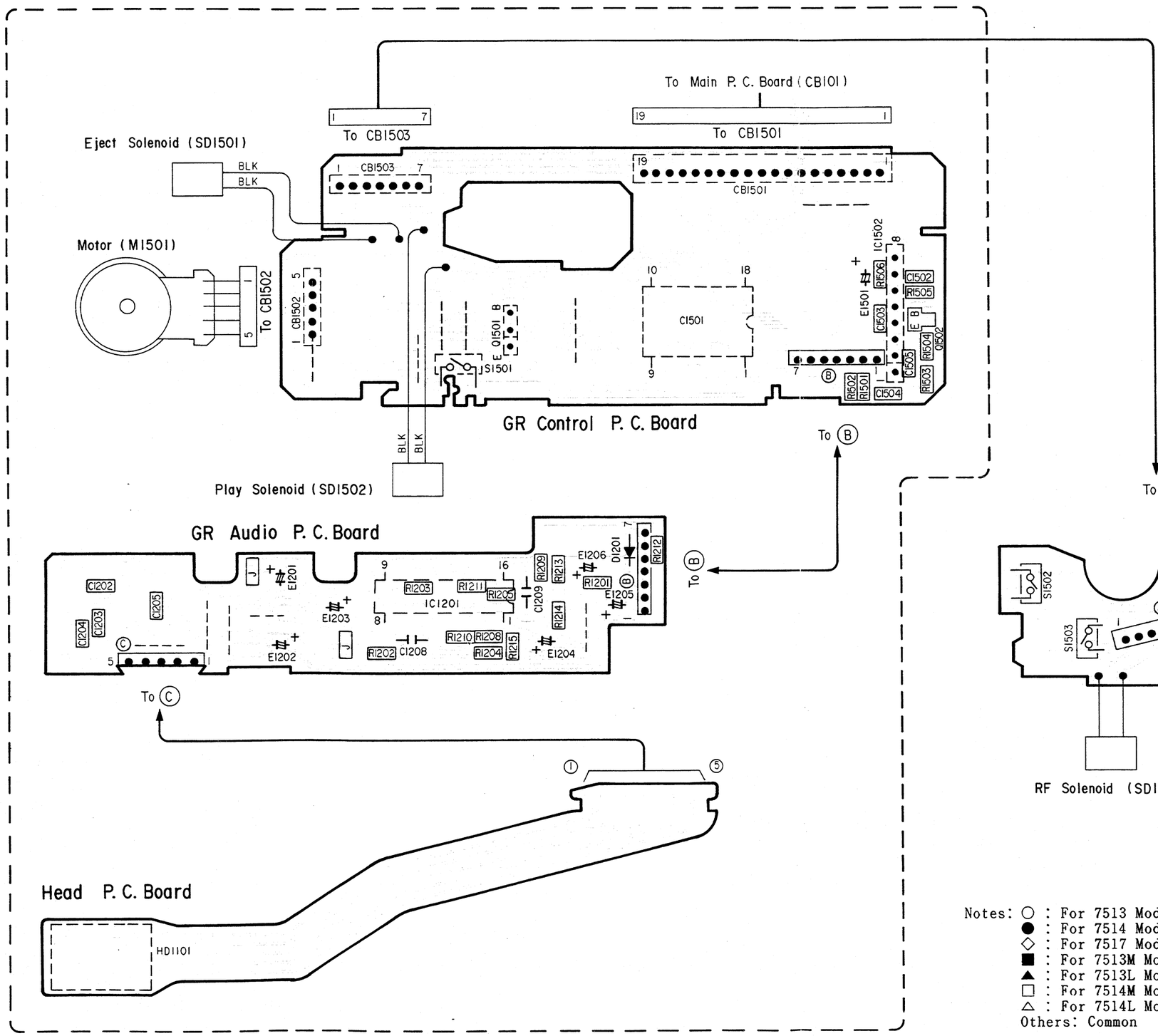
Blue Color Pattern : Foil Side Pattern

7513/7514/7517
7513M/7513L/7514M/75

Parts Layout on P.C. Boards and Wiring Diagram (2/2)

All P.C. Boards viewed from soldered Side.

●,◇,□,△ Model Only



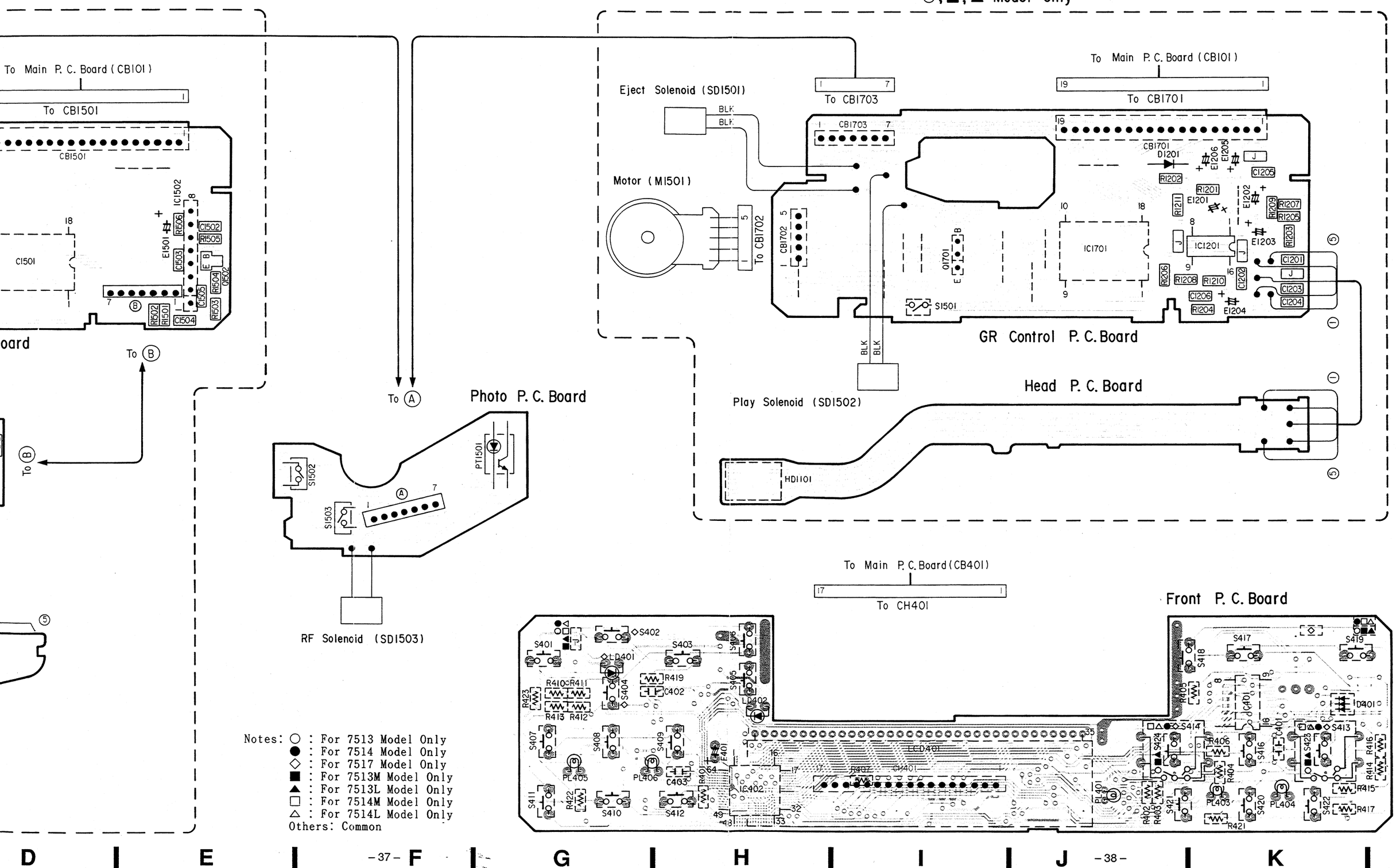
Notes: ○ : For 7513 Model Only
● : For 7514 Model Only
◇ : For 7517 Model Only
■ : For 7513M Model Only
▲ : For 7513L Model Only
□ : For 7514M Model Only
△ : For 7514L Model Only
Others: Common

gram (2/2)

All P.C. Boards viewed from soldered Side.

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

○, ■, ▲ Model Only



Notes: ○ : For 7513 Model Only
● : For 7514 Model Only
◇ : For 7517 Model Only
■ : For 7513M Model Only
▲ : For 7513L Model Only
□ : For 7514M Model Only
△ : For 7514L Model Only
Others: Common

Schematic Diagram (1/3)

IC	IC301																IC501				IC503								IC201								IC208							
Transistor (Q)	Q003 Q001 Q005 Q004 Q801 Q803 Q802 Q301							Q009 Q804		Q010							Q390		Q502 Q391						Q823				Q811				Q812				Q503						Q203 Q204				Q506		Q507 Q508

Main P.C.Board (1/2)

Main P.C. Board (2/2)

From GR Control P.C.Board (CB1501)(●◇□△) (CB1701)(○■▲)

From Front P.C.Board (CH401)

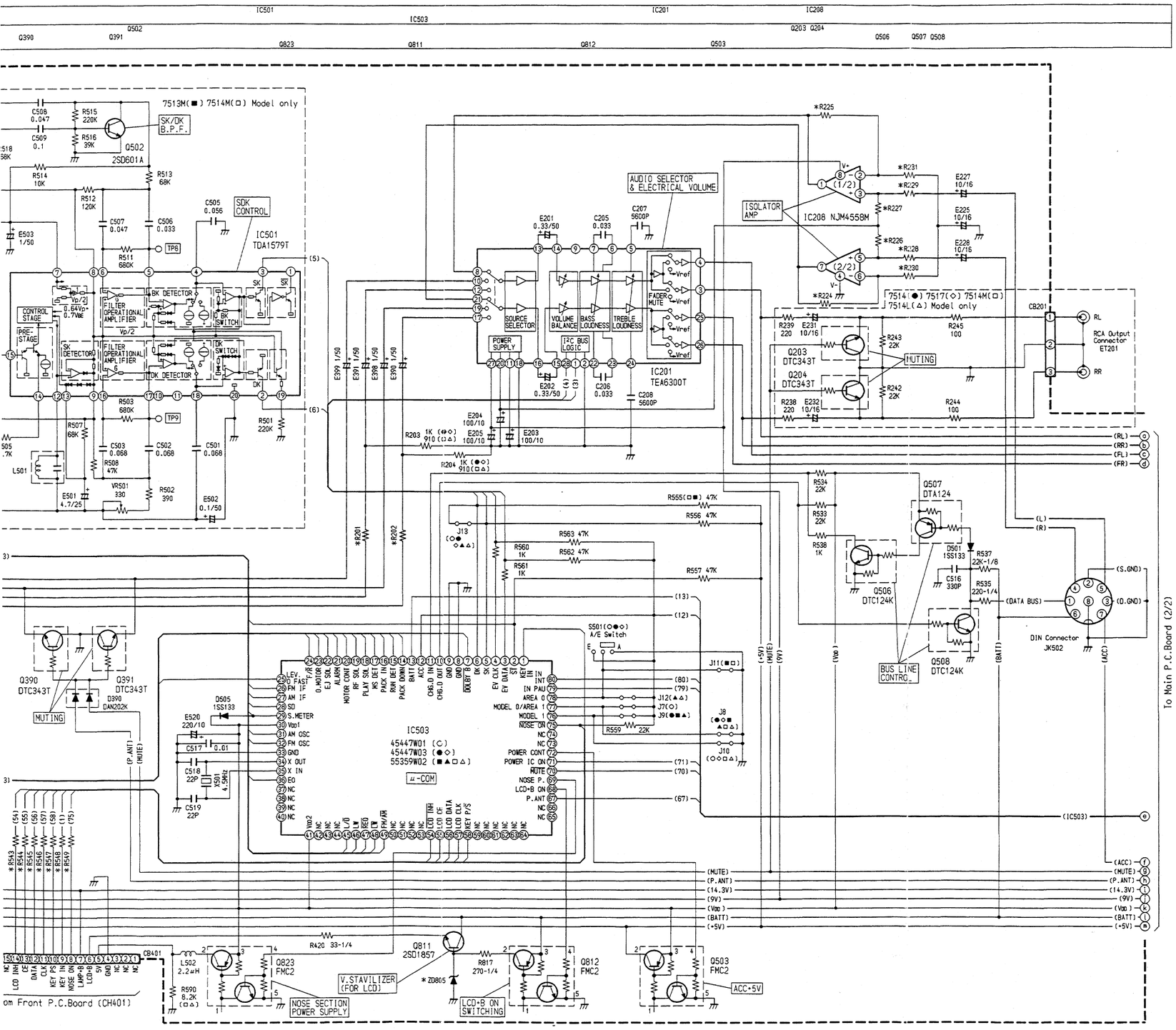
7513M(■) 7514M(□) Model only

7514M(□) 7514L(△) 7514(●) 7517(◇) Model only

7513M(■) 7513L(▲) 7514M(□) 7514L(△) Model only

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$



Difference List (* Mark)

Ref. \ Model	7513 (○)	7514 (●)	7517 (◇)	7513M (■)	7513L (▲)	7514M (□)	7514L (△)
D209	DSA3A4	10E2	DSA3A4	DSA3A4	DSA3A4	10E2	10E2
D803,899	1N4003	1N4003	1N4003	11ES2	11ES2	11ES2	11ES2
LD401	J	J	MBG4868K	J	J	J	J
ZD501, 502	—	—	MTZJ5.6A	J	J	J	J
ZD506	MTZJ2.7A	MTZJ2.7A	MTZJ2.7A	HZS2.7NB1	HZS2.7NB1	HZS2.7NB1	HZS2.7NB1
ZD804	MTZJ7.5B	MTZJ7.5B	MTZJ7.5B	HZS7.5NB2	HZS7.5NB2	HZS7.5NB2	HZS7.5NB2
S406	P.SCAN / M.I.X.	P.SCAN / M.I.X.	P.SCAN	SDK / M.I.X.	P.SCAN / M.I.X.	SDK / M.I.X.	P.SCAN / M.I.X.
S407	3	3 / P.S. UP	3 / P.S. UP	3	3	3 / P.S. UP	3 / P.S. UP
S408	2	2 / P.S. DN	2 / P.S. DN	2	2	2 / P.S. DN	2 / P.S. DN
S409	1	1 / DOLBY	1 / DOLBY	1	1	1 / DOLBY	1 / DOLBY
S412	4 / CT	4 / B.SKIP / CT	4 / B.SKIP / CT	4 / CT	4 / CT	4 / B.SKIP / CT	4 / B.SKIP / CT
R258, 259	270	—	5.6K	100	100	—	—
R260, 261	270	5.6K	5.6K	100	100	3.3K	3.3K
R262, 263	2.2K	—	2.2K	3.3K	3.3K	—	—
R264, 265	2.2K	2.2K	2.2K	3.3K	3.3K	2.2K	2.2K
R266, 267	1.2K	—	470	1.2K	1.2K	—	—
R268, 269	1.2K	470	470	1.2K	1.2K	470	470
R423	680-1/4	680-1/4	560-1/4	680-1/4	680-1/4	680-1/4	680-1/4
R827	2.2K	2.2K	2.2K	J	J	J	J

IC201 (MODE : FM)

1	4.1V	15	4.3V
2	0V	16	4.3V
3	4.3V	17	2.3V
4	4.3V	18	0V
5	4.3V	19	4.3V
6	4.3V	20	4.3V
7	4.3V	21	4.3V
8	4.3V	22	4.3V
9	8.6V	23	4.3V
10	4.3V	24	4.3V
11	8.6V	25	4.3V
12	2.3V	26	4.3V
13	4.3V	27	8.7V
14	4.3V	28	4.1V

IC208

1	4.3V
2	4.3V
3	4.3V
4	0V
5	4.3V
6	4.3V
7	4.3V
8	8.6V

□△●◇ IC301 (MODE : TAPE)

1	4.4V	9	4.4V
2	8.6V	10	2.6V
3	4.4V	11	4.4V
4	4.4V	12	8.6V
5	0V	13	1.2V
6	4.4V	14	4.4V
7	2.3V	15	0V
8	4.4V	16	4.4V

■□○◇IC501

1	PS	11	PS
2	0V	12	4.4V
3	0V	13	5.5V
4	PS	14	4.3V
5	4.3V	15	PS
6	4.3V	16	4.4V
7	8.7V	17	4.4V
8	4.3V	18	PS
9	5.4V	19	3.7V
10	PS	20	0V

IC801

1	14.3V
2	5.8V
3	0V
4	4.8V
5	5V

IC503

1	4.1V		17	5V	33	0V	49	4.2V / 0V	FM / AM	65	—	
2	0V / 5V	ST ON / OFF	18	0.2V	34	2.4V	50	—		66	—	
3	4.1V		19	0.2V	35	2.6V	51	—		67	4.2V / 0V	RADIO / TAPE
4	4.1V		20	0.2V	36	1.2V	52	—		68	4.2V	
5	5V		21	0V	37	—	53	—		69	4.2V	
6	5V		22	0V	38	—	54	4.2V		70	0V / 4.2V	MUTE ON / OFF
7	0V / 5V	DOLBY ON / OFF	23	0V	39	—	55	0.4V		71	4.2V	
8	0V		24	0V	40	—	56	0.7V		72	4.2V	
9	0V		25	0V	41	5V	57	0.1V		73	—	
10	0V		26	0V	42	—	58	0V		74	—	
11	5V		27	0V	43	—	59	—		75	1.3V	
12	5V		28	0V	44	—	60	—		76	4.2V / 0V	7513 / 7514
13	3.8V		29	4.2V	45	0V / 4.2V	DX / LO	61	—	77	0V	
14	5V		30	5V	46	4.9V	62	—		78	0V / 4.2V	M / L
15	5V		31	0V	47	4.6V	63	—		79	0V	
16	5V		32	2V	48	0V	64	—		80	0V	

		E	C	B	
	Q003	0V	1.3V	0.6V	
	Q004	0.6V	7.9V	1.2V	
	Q009	0V	4.88V	0V	
	Q010	4.89V	0V	4.87V	
□△ ●◇	Q203	0V	0V	0V / 8.4V	MUTE ON / OFF
□△ ●◇	Q204	0V	0V	0V / 8.4V	MUTE ON / OFF
◇	Q301	0V	8.6V	0V	
	Q390	0V	0V	0V / 8.4V	MUTE ON / OFF
	Q391	0V	0V	0V / 8.4V	MUTE ON / OFF
■□	Q502	0.6V	0.6V	0V	
	Q506	5.5V	0V	5.5V	
	Q507	0V	5V	0V	
	Q508	0V	0V	0V	
	Q801	8.87V	0V	8.87V	AM
	Q802	8.87V	0V	8.87V	FM
	Q803	14.4V	14.4V	13.7V	
	Q804	8.9V	14.3V	9.4V	
	Q811	9.6V	14.4V	10.1V	

	1	2	3	4	5	
Q001	0V	0V	4.6V	0V	4.6V	
Q005	0V / 0V	0.62V / 0V	0V / 4.97V	0V / 0V	4.9V / 0V	LW / FM
Q503	—	4.9V	5V	5V	0V	
Q812	—	14.3V	14.3V	5V	0V	
Q823	—	5V	5V	5V	5V	

Measuring Conditions

1. Power Supply Voltage : DC14.4V
2. Measuring Meter : Digital Multi Meter
3. Measuring Reference Point : Between Ground
4. Measuring Condition : No Signal Input
   - FM 98.1MHz
   - AM ..... 1,000kHz [○●◇]
   - MW ..... 999kHz [■▲□△]
   - LW ..... 216kHz [■▲□△]
   - TAPE ..... Blank

Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only,
△ : For 7514L Model Only, ○ : For 7513 Model Only, ● : For 7514 Model Only,
◇ : For 7517 Model Only, Others : Common.

7513/7514/7517
7513M/7513L/7514M/7514L

Schematic Diagram (2/3)

IC	IC210 IC211	IC801	IC401	IC402
Transistor (Q)	Q205 Q208 Q207 Q208 Q806 Q505 Q509	Q814 Q813 Q815 Q816 Q818 Q808 Q807 Q820 Q821		

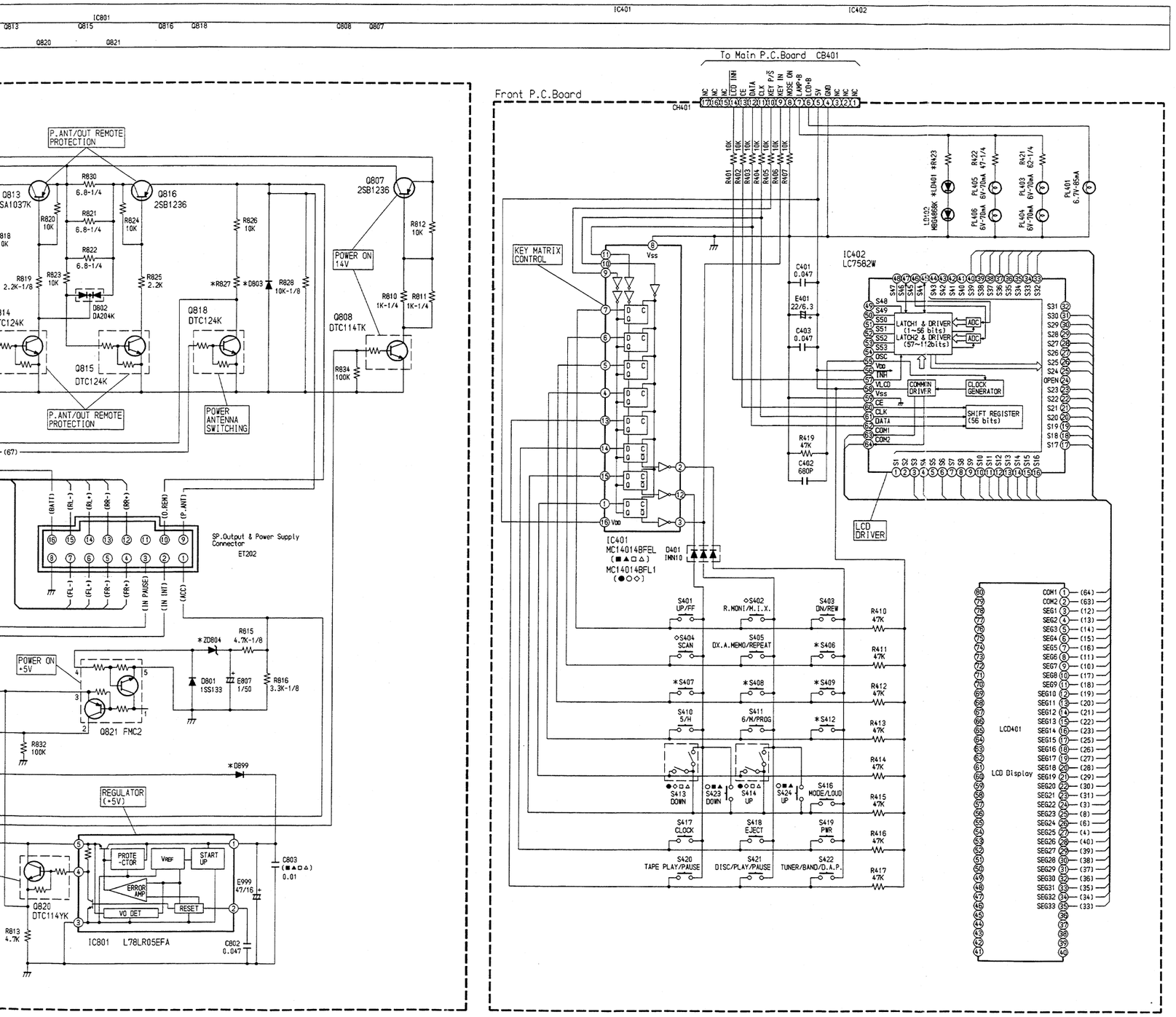
Main P.C.Board(2/2)

7513(○) 7517(◇) 7513M(■) 7513L(▲) Model Only

To Main P.C.Board (1/2)

To Main P.C.Board CB401

Front P.C.Board



Difference List (* Mark)

Ref. \ Model	7513 (○)	7514 (●)	7517 (◇)	7513M (■)	7513L (▲)	7514M (□)	7514L (△)
ZD805	MTZJ10B	MTZJ10B	MTZJ10B	HZS10NB2	HZS10NB2	HZS9.1NB3	HZS9.1NB3
C012	3900P	8200P	8200P	0.022	0.022	0.047	0.047
C015	0.056	0.056	0.056	0.068	0.068	0.068	0.068
R020, 021	47K	27K	27K	12K	12K	8.2K	8.2K
R022, 023	15K	3.3K	3.3K	3.3K	3.3K	3.3K	3.3K
R024, 025	22K	47K	47K	15K	15K	47K	47K
R026	7.5K	7.5K	7.5K	8.2K	8.2K	10K	10K
R201, 202	1K	1K	1K	J	J	1K	1K
R224~227	10K	10K	10K	6.8K	3.3K	8.2K	8.2K
R228~231	51K	22K	22K	22K	22K	22K	22K
R304	—	10K	10K	10K	10K	10K	10K
R305, 306	J	J	J	1K	J	J	J
R543~549	1K	1K	1K	10K	10K	10K	10K

■▲○◇ **IC210** (MODE : FM)

1	1.7V	10	14.3V
2	5V	11	5.4V
3	4.9V	12	5.6V
4	4.9V	13	12.1V
5	5V	14	12.7V
6	5V	15	5.4V
7	4.9V	16	5.6V
8	5V	17	14.3V
9	14.3V		

IC211

1	1.7V	10	14.3V
2	5V	11	5.9V
3	5V	12	5.9V
4	4.9V	13	12.1V
5	0V	14	12.7V
6	5.1V	15	5.9V
7	5.1V	16	5.9V
8	5V	17	14.3V
9	14.3V		

IC401 (MODE : FM)

1	5V	9	0V
2	0.6V	10	0.1V
3	4.1V	11	0.8V
4	5V	12	0.6V
5	5V	13	5V
6	5V	14	5V
7	5V	15	5V
8	0V	16	5V

IC402

1	—	17	PS	33	PS	49	—
2	—	18	PS	34	PS	50	—
3	PS	19	PS	35	PS	51	—
4	PS	20	PS	36	PS	52	—
5	—	21	PS	37	PS	53	—
6	PS	22	PS	38	PS	54	—
7	—	23	PS	39	PS	55	PS
8	PS	24	—	40	PS	56	5V
9	—	25	PS	41	—	57	PS
10	PS	26	PS	42	—	58	5V
11	PS	27	PS	43	—	59	0V
12	PS	28	PS	44	—	60	PS
13	PS	29	PS	45	—	61	PS
14	PS	30	PS	46	—	62	PS
15	PS	31	PS	47	—	63	PS
16	PS	32	—	48	—	64	PS

		E	C	B	
■▲ ○◇	Q205	0V	0V	0V / 8.4V	MUTE ON / OFF
■▲ ○◇	Q206	0V	0V	0V / 8.4V	MUTE ON / OFF
	Q207	0V	0V	0V / 8.4V	MUTE ON / OFF
	Q208	0V	0V	0V / 8.4V	MUTE ON / OFF
	Q509	0V / 0V	9.6V / 0V	0V / 4.2V	MUTE ON / OFF
	Q806	8.69V	14.3V	9.26V	
	Q807	13.6V / 14.5V	14.3V / 0V	14.4V / 14.5V	POWER ON / OFF
	Q808	0V	0.2V	4.9V	
	Q813	14.3V	0V	14.3V	POWER ON
	Q814	0V	14.3V	0V	
	Q815	0V	0V	3.6V	
	Q816	13.7V	14.3V	14.3V	
	Q818	14.3V	0V	14.3V	
	Q820	4.1V	5V	4.8V	

	1	2	3	4	5	
Q505	—	14V / 0V	14V / 14V	9.6V / 0V	0V	MUTE ON / OFF
Q821	—	4V	4.2V	6.6V	0V	

Measuring Conditions

1. Power Supply Voltage : DC14.4V
2. Measuring Meter : Digital Multi Meter
3. Measuring Reference Point : Between Ground
4. Measuring Condition : No Signal Input
   - FM 98.1MHz
   - AM ..... 1,000kHz [○●◇]
   - MW ..... 999kHz [■▲□△]
   - LW ..... 216kHz [■▲□△]
   - TAPE ..... Blank

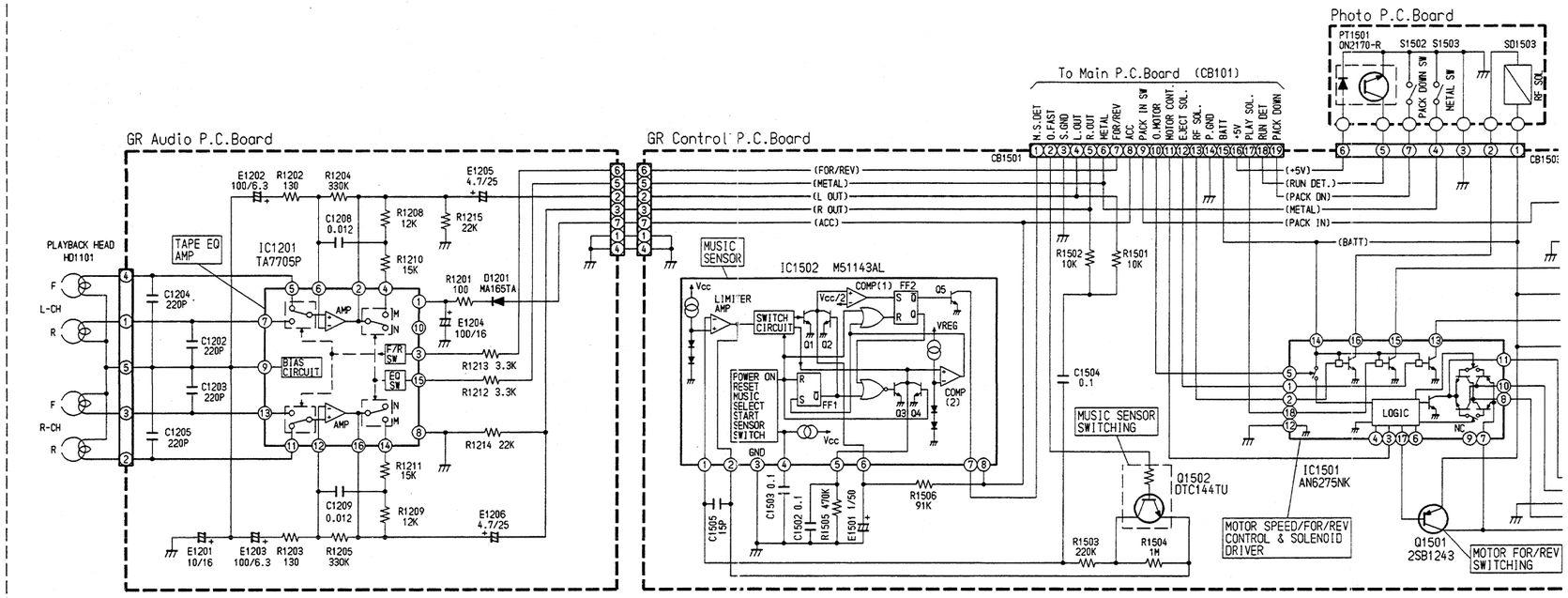
Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only, △ : For 7514L Model Only, ○ : For 7513 Model Only, ● : For 7514 Model Only, ◇ : For 7517 Model Only, Others : Common.

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

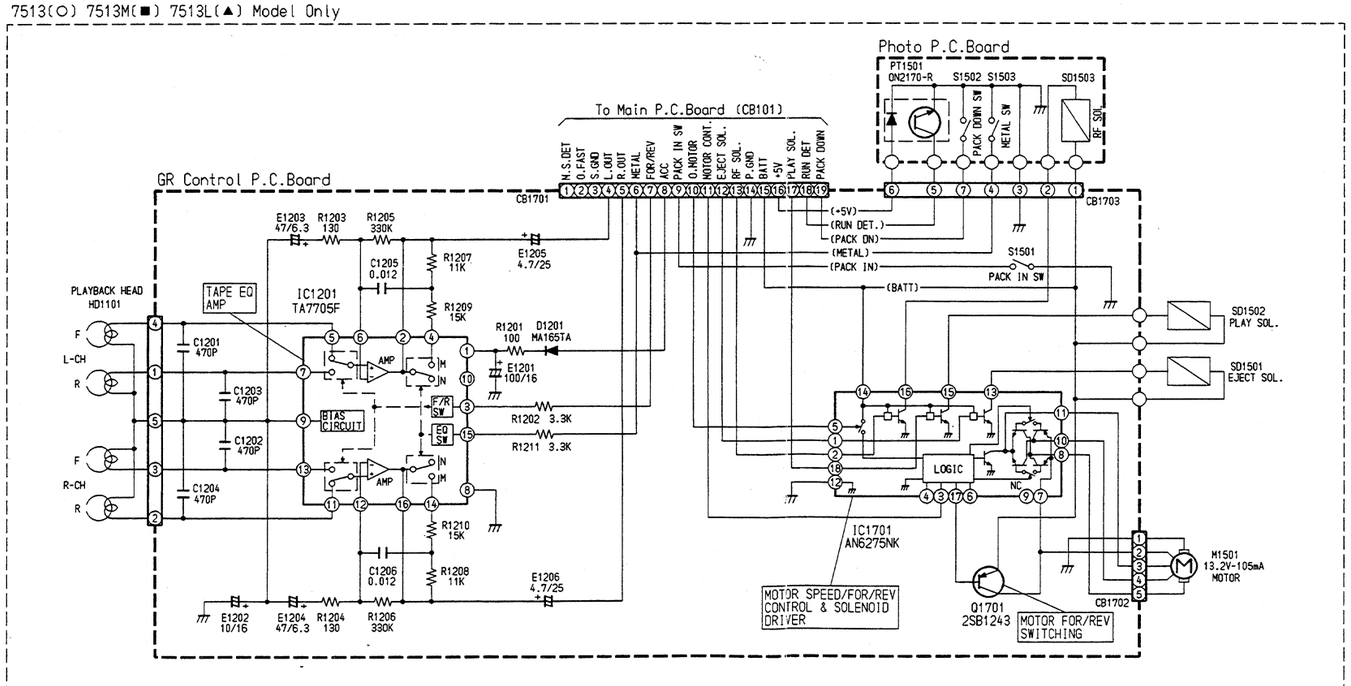
Schematic Diagram (3/3)

IC	IC1201	IC1502	IC1701	IC1501
Transistor (Q,PT)	PT1501	Q1701	Q1502	PT1501 Q1501

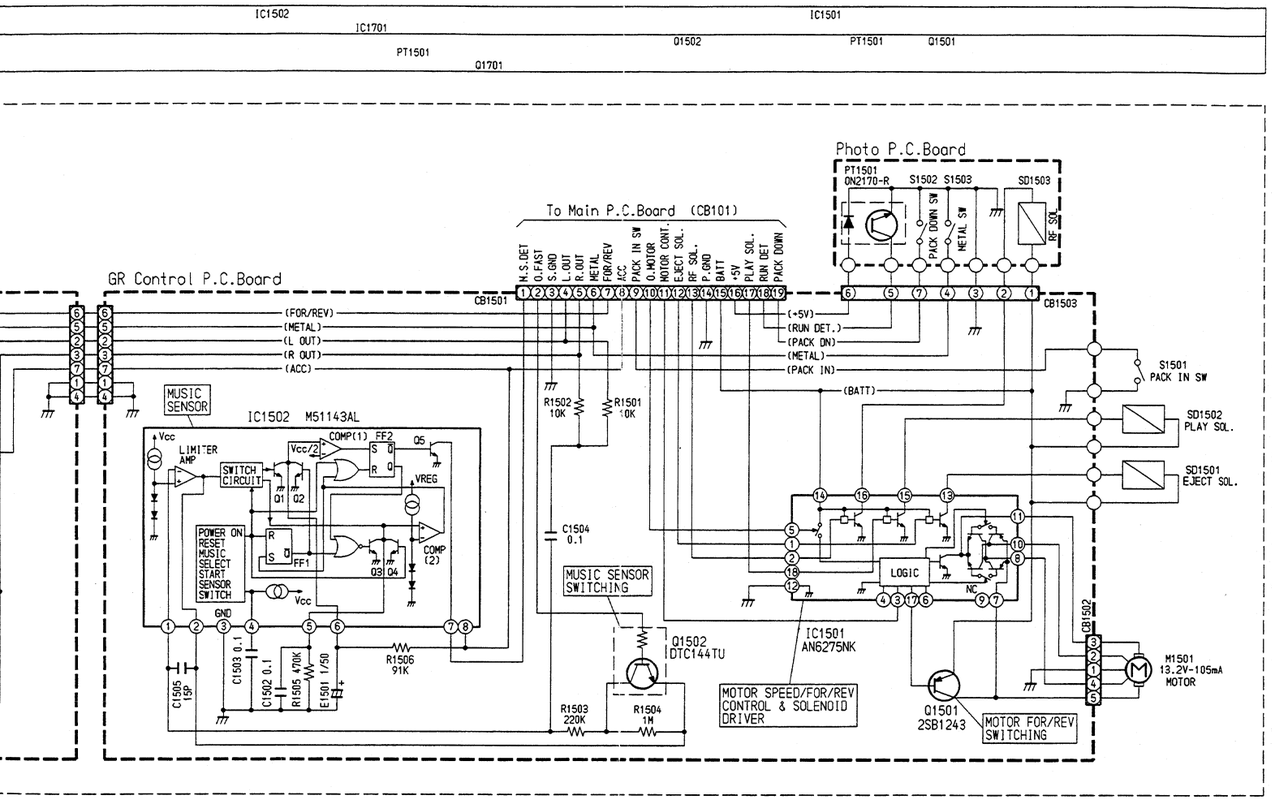
7514(●) 7517(◇) 7514M(□) 7514L(△) Model Only

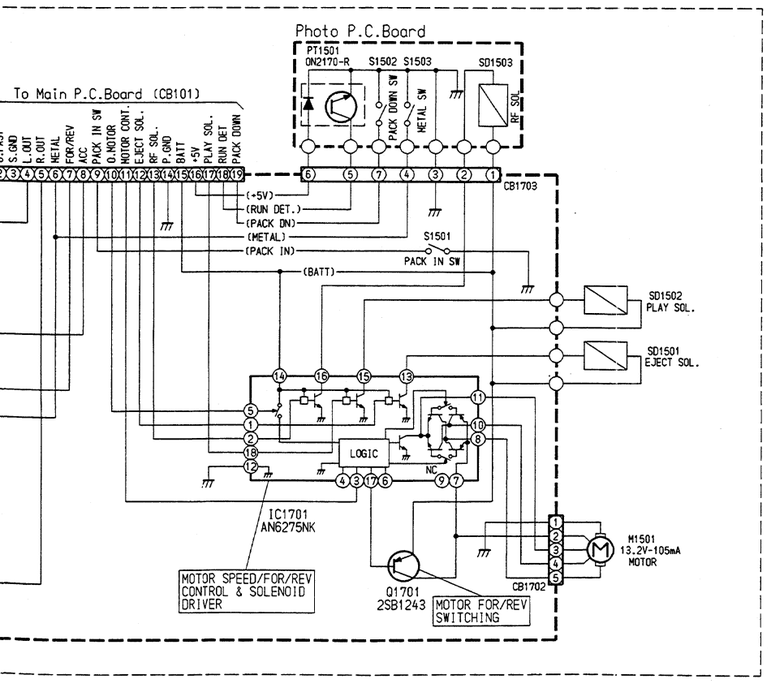


7513(○) 7513M(■) 7513L(▲) Model Only



Notes : ■
△
◇





□△●◇ IC1201

1	13.1V	9	2.9V
2	3.1V	10	—
3	4.9V	11	2.9V
4	3.1V	12	2.9V
5	2.9V	13	2.9V
6	2.9V	14	3.1V
7	2.9V	15	0.1V
8	0V	16	3.1V

■▲○ IC1201

1	10.8V	9	2.9V
2	3V	10	—
3	5.1V	11	2.9V
4	3V	12	2.9V
5	2.9V	13	2.9V
6	2.9V	14	3V
7	2.9V	15	0V
8	0V	16	3V

□△○◇ IC1501

1	0V	10	13.9V
2	0V	11	8.1V
3	5.1V	12	0V
4	—	13	14V
5	5.1V	14	14V
6	—	15	0.2V
7	13.9V	16	14V
8	8.2V	17	13.2V
9	—	18	5.1V

□△●◇ IC1502

1	1.41V
2	1.38V
3	0V
4	1.31V
5	0.02V
6	0.02V
7	0.05V
8	14.01V

■▲○ IC1701

1	0V	10	11.9V
2	0V	11	5.7V
3	5.1V	12	0V
4	—	13	12V
5	5.1V	14	12V
6	—	15	0.2V
7	11.9V	16	12V
8	5.7V	17	11.3V
9	—	18	5.1V

		E	C	B
□△ ●◇	Q1501	14V	13.8V	13.6V
□△ ●◇	Q1502	0V	0.4V	3.8V
■▲ ○	Q1701	12V	11.9V	11.3V

Measuring Conditions

1. Power Supply Voltage : DC14.4V
2. Measuring Meter : Digital Multi Meter
3. Measuring Reference Point : Between Ground
4. Measuring Condition : No Signal Input
   - FM 98.1MHz
   - AM ..... 1,000kHz [○●◇]
   - MW ..... 999kHz [■▲□△]
   - LW ..... 216kHz [■▲□△]
   - TAPE ..... Blank

Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only,
△ : For 7514L Model Only, ○ : For 7513 Model Only, ● : For 7514 Model Only,
◇ : For 7517 Model Only, Others : Common.

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Electrical Parts List

Resistor : Carbon resistors under 1 / 4 watts are not mentioned in the parts list, please confirm them by schematic diagram.

Capacitor : μF=microfarads, pF=picofarads

Abbreviations

RES.=	Resistor	CAP.=	Capacitor
C.F.=	Carbon Film	ELY.=	Electrolytic
M.F.=	Metal Film	CER.=	Ceramic
M.O.=	Metal Oxide Film	MYL.=	Mylar
M.P.=	Metal Plate	TAN.=	Tantalum
TR.=	Transistor	POLY.=	Polystyrol
TRANS.=	Transformer	PP.=	Polypropylene
CP.=	Chip	PLT.=	Polyethylene
		PF.=	Polyester Film

Main P. C. Board

IC's

Symbol No.	Part No.	Description
	IC201	51T83607F05	TEA6300T
	IC208	51T93336F01	NJM4558M
■	IC210	51T35133W02	TA8215H
▲	IC210	51T35133W02	TA8215H
	IC211	51T35133W02	TA8215H
□	IC301	51T16466W02	CXA1163M
△	IC301	51T16466W02	CXA1163M
■	IC501	51T15655W02	TDA1579T
□	IC501	51T15655W02	TDA1579T
	IC503	51T55359W02	55359W02
	IC801	51T15268W04	L78LR05EFA

Transistors

Symbol No.	Part No.	Description
	Q001	48T45594W08	CP., XN1212
	or	48T73888F08	CP., FMG1
	Q003	48T90181F05	2SD1993
	Q004	48T90181F05	2SD1993
	Q005	48T45594W08	CP., XN1212
	or	48T73888F08	CP., FMG1
	Q009	48T64222F05	CP., UN2215
	or	48T62967F09	CP., DTC114TK
	Q010	48T64221F02	CP., UN2112
	or	48T62966F03	CP., DTA124
□	Q203	48T62967F33	CP., DTC343T
△	Q203	48T62967F33	CP., DTC343T
□	Q204	48T62967F33	CP., DTC343T
△	Q204	48T62967F33	CP., DTC343T
■	Q205	48T62967F33	CP., DTC343T
▲	Q205	48T62967F33	CP., DTC343T
■	Q206	48T62967F33	CP., DTC343T
▲	Q206	48T62967F33	CP., DTC343T
	Q207	48T62967F33	CP., DTC343T
	Q208	48T62967F33	CP., DTC343T
	Q390	48T62967F33	CP., DTC343T
	Q391	48T62967F33	CP., DTC343T
■	Q502	48T52438F01	CP., 2SD601A
□	Q502	48T52438F01	CP., 2SD601A
	Q503	48T45594W12	CP., XN1A312
	or	48T73888F12	CP., FMC2
	Q505	48T45594W12	CP., XN1A312
	or	48T73888F12	CP., FMC2
	Q506	48T64222F02	CP., UN2212
	or	48T62967F03	CP., DTC124K
	Q507	48T64221F02	CP., UN2112
	or	48T62966F03	CP., DTA124
	Q508	48T64222F02	CP., UN2212
	or	48T62967F03	CP., DTC124K
	Q509	48T64222F02	CP., UN2212
	or	48T62967F03	CP., DTC124K
	Q801	48T84234F03	2SB1238
	Q802	48T84234F03	2SB1238
	Q803	48T64222F02	CP., UN2212
	or	48T62967F03	CP., DTC124K
	Q804	48T15289W03	2SD2008Q
	Q806	48T83835F03	2SD1859
	Q807	48T55058W01	2SB1236
	Q808	48T64222F05	CP., UN2215
	or	48T62967F09	CP., DTC114TK
	Q811	48T55057W01	2SD1857
	Q812	48T45594W12	CP., XN1A312
	or	48T73888F12	CP., FMC2
	Q813	48T63420F01	CP., 2SA1037K
	Q814	48T64222F02	CP., UN2212
	or	48T62967F03	CP., DTC124K
	Q815	48T64222F02	CP., UN2212
	or	48T62967F03	CP., DTC124K
	Q816	48T55058W01	2SB1236
	Q818	48T64222F02	CP., UN2212
	or	48T62967F03	CP., DTC124K
	Q820	48T64222F04	CP., UN2214
	or	48T62967F06	CP., DTC114YK
	Q821	48T45594W12	CP., XN1A312
	or	48T73888F12	CP., FMC2
	Q823	48T45594W12	CP., XN1A312
	or	48T73888F12	CP., FMC2

Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only,
△ : For 7514L Model Only, Others : Common.

Diodes

Symbol No.	Part No.	Description
	D002	48T81063F01	CP., MA159
	D003	48T63463F01	CP., DAP202K
	D101	48T68828F01	1SS133
■	D201	48T84052F01	11ES2
▲	D201	48T84052F01	11ES2
■	D202	48T84052F01	11ES2
▲	D202	48T84052F01	11ES2
■	D203	48T84052F01	11ES2
▲	D203	48T84052F01	11ES2
■	D204	48T84052F01	11ES2
▲	D204	48T84052F01	11ES2
	D205	48T84052F01	11ES2
	D206	48T84052F01	11ES2
	D207	48T84052F01	11ES2
	D208	48T84052F01	11ES2
■	D209	48T68580F03	DSA3A4
▲	D209	48T68580F03	DSA3A4
□	D209	48T81044F01	10E2
△	D209	48T81044F01	10E2
	D390	48T63462F01	CP., DAN202K
	D501	48T68828F01	1SS133
	D504	48T70933F01	1SS136
	D505	48T68828F01	1SS133
	D801	48T68828F01	1SS133
	D802	48T64134F01	CP., DA204K
	D803	48T84052F01	11ES2
	D899	48T84052F01	11ES2
	ZD506	48T90517F07	Zener, HZS2.7NB1
	ZD801	48T83128F25	Zener, HZS9C1L
	ZD803	48T83128F23	Zener, HZS9B2L
	ZD804	48T90517F36	Zener, HZS7.5NB2
	ZD805	48T90517F43	Zener, HZS9.1NB3

Crystal

Symbol No.	Part No.	Description
	X501	91T25806W23	4.5MHz

Coils

Symbol No.	Part No.	Description
■	L501	24T84175F01	SDK (57KHz)
□	L501	24T84175F01	SDK (57KHz)
	L502	24T70381F13	Inductor, 2.2μH

Capacitors

Symbol No.	Part No.	Description
	C001	08S65128F69	CP., 0.01μF
	E001	23T45365W03	ELY., 220μF / 10V
	C002	08S65128F69	CP., 0.01μF
	C003	08T15399W02	CP., 0.033μF
	E003	23S61523F25	ELY., 0.1μF / 50V
	C004	08T15399W02	CP., 0.033μF
	E004	23S61524F28	ELY., 0.1μF / 50V
	C005	08T15399W02	CP., 0.033μF
	E005	23S61524F28	ELY., 0.1μF / 50V
	C006	08S53332F47	CP., 0.01μF
	E007	23S61524F31	ELY., 0.47μF / 50V
	C009	08S65128F12	CP., 10pF
	C010	08S65128F78	CP., 0.022μF
	C011	08S65128F78	CP., 0.022μF
■	C012	08S65128F78	CP., 0.022μF
▲	C012	08S65128F78	CP., 0.022μF
□	C012	08T15399W03	CP., 0.047μF
△	C012	08T15399W03	CP., 0.047μF
	C013	08S65480F49	CER., 1000pF
	C014	08S65128F78	CP., 0.022μF
	C015	08S53332F64	CP., 0.068μF
	E101	23S61523F08	ELY., 100μF / 6.3V
	E201	23S61523F27	ELY., 0.33μF / 50V
	E202	23S61523F27	ELY., 0.33μF / 50V
	E203	23S61523F34	ELY., 100μF / 10V
	E204	23S61523F34	ELY., 100μF / 10V
	C205	08T55390W23	TF, 0.033μF
	E205	23S61523F34	ELY., 100μF / 10V
	C206	08T55390W23	TF, 0.033μF
	C207	08S53332F44	CP., 5600pF
	C208	08S53332F44	CP., 5600pF
	C212	08T15807W05	CP., 0.1μF
■	C213	08T55390W31	TF, 0.15μF
▲	C213	08T55390W31	TF, 0.15μF
■	C214	08T55390W31	TF, 0.15μF
▲	C214	08T55390W31	TF, 0.15μF
■	C215	08T55390W31	TF, 0.15μF
▲	C215	08T55390W31	TF, 0.15μF
■	C216	08T55390W31	TF, 0.15μF
▲	C216	08T55390W31	TF, 0.15μF
	C217	08T55390W31	TF, 0.15μF
	C218	08T55390W31	TF, 0.15μF
	C219	08T55390W31	TF, 0.15μF
	C220	08T55390W31	TF, 0.15μF
■	C221	08T15807W05	CP., 0.1μF
▲	C221	08T15807W05	CP., 0.1μF
	E225	23S61524F13	ELY., 10μF / 16V
	E227	23S61524F13	ELY., 10μF / 16V
	E228	23S61524F13	ELY., 10μF / 16V
□	E231	2
△	E231	2
□	E232	2
△	E232	2
■	E233	2
▲	E233	2
■	E234	2
▲	E234	2
	E235	2
	E236	2
■	E237	2
▲	E237	2
■	E238	2
▲	E238	2
	E239	2
	E240	2
■	E241	2
▲	E241	2
	E242	2
■	E243	2
▲	E243	2
	E244	2
■	E245	2
▲	E245	2
	E246	2
■	E247	2
▲	E247	2
	E248	2
	E301	2
	E302	2
□	E303	2
△	E303	2
□	E304	2
△	E304	2
□	E305	2
△	E305	2
□	E306	2
△	E306	2
□	E307	2
△	E307	2
□	E308	2
△	E308	2
□	E309	2
△	E309	2
	E390	2
	E391	2
	E398	2
	E399	2
■	C501	0
□	C501	0

Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only,
△ : For 7514L Model Only, Others : Common.

Symbol No.	Part No.	Description
Diodes		
	D002	48T81063F01	CP., MA159
	D003	48T63463F01	CP., DAP202K
	D101	48T68828F01	1SS133
■	D201	48T84052F01	11ES2
▲	D201	48T84052F01	11ES2
■	D202	48T84052F01	11ES2
▲	D202	48T84052F01	11ES2
■	D203	48T84052F01	11ES2
▲	D203	48T84052F01	11ES2
■	D204	48T84052F01	11ES2
▲	D204	48T84052F01	11ES2
	D205	48T84052F01	11ES2
	D206	48T84052F01	11ES2
	D207	48T84052F01	11ES2
	D208	48T84052F01	11ES2
■	D209	48T68580F03	DSA3A4
▲	D209	48T68580F03	DSA3A4
□	D209	48T81044F01	10E2
△	D209	48T81044F01	10E2
	D390	48T63462F01	CP., DAN202K
	D501	48T68828F01	1SS133
	D504	48T70933F01	1SS136
	D505	48T68828F01	1SS133
	D801	48T68828F01	1SS133
	D802	48T64134F01	CP., DA204K
	D803	48T84052F01	11ES2
	D899	48T84052F01	11ES2
	ZD506	48T90517F07	Zener, HZS2.7NB1
	ZD801	48T83128F25	Zener, HZS9C1L
	ZD803	48T83128F23	Zener, HZS9B2L
	ZD804	48T90517F36	Zener, HZS7.5NB2
	ZD805	48T90517F43	Zener, HZS9.1NB3
Crystal		
	X501	91T25806W23	4.5MHz
Coils		
■	L501	24T84175F01	SDK (57KHz)
□	L501	24T84175F01	SDK (57KHz)
	L502	24T70381F13	Inductor, 2.2μH

Symbol No.	Part No.	Description	
Capacitors			
	C001	08S65128F69	CP.,	0.01μF
	E001	23T45365W03	ELY.,	220μF / 10V
	C002	08S65128F69	CP.,	0.01μF
	C003	08T15399W02	CP.,	0.033μF
	E003	23S61523F25	ELY.,	0.1μF / 50V
	C004	08T15399W02	CP.,	0.033μF
	E004	23S61524F28	ELY.,	0.1μF / 50V
	C005	08T15399W02	CP.,	0.033μF
	E005	23S61524F28	ELY.,	0.1μF / 50V
	C006	08S53332F47	CP.,	0.01μF
	E007	23S61524F31	ELY.,	0.47μF / 50V
	C009	08S65128F12	CP.,	10pF
	C010	08S65128F78	CP.,	0.022μF
	C011	08S65128F78	CP.,	0.022μF
■	C012	08S65128F78	CP.,	0.022μF
▲	C012	08S65128F78	CP.,	0.022μF
□	C012	08T15399W03	CP.,	0.047μF
△	C012	08T15399W03	CP.,	0.047μF
	C013	08S65480F49	CER.,	1000pF
	C014	08S65128F78	CP.,	0.022μF
	C015	08S53332F64	CP.,	0.068μF
	E101	23S61523F08	ELY.,	100μF / 6.3V
	E201	23S61523F27	ELY.,	0.33μF / 50V
	E202	23S61523F27	ELY.,	0.33μF / 50V
	E203	23S61523F34	ELY.,	100μF / 10V
	E204	23S61523F34	ELY.,	100μF / 10V
	C205	08T55390W23	TF,	0.033μF
	E205	23S61523F34	ELY.,	100μF / 10V
	C206	08T55390W23	TF,	0.033μF
	C207	08S53332F44	CP.,	5600pF
	C208	08S53332F44	CP.,	5600pF
	C212	08T15807W05	CP.,	0.1μF
■	C213	08T55390W31	TF,	0.15μF
▲	C213	08T55390W31	TF,	0.15μF
■	C214	08T55390W31	TF,	0.15μF
▲	C214	08T55390W31	TF,	0.15μF
■	C215	08T55390W31	TF,	0.15μF
▲	C215	08T55390W31	TF,	0.15μF
■	C216	08T55390W31	TF,	0.15μF
▲	C216	08T55390W31	TF,	0.15μF
	C217	08T55390W31	TF,	0.15μF
	C218	08T55390W31	TF,	0.15μF
	C219	08T55390W31	TF,	0.15μF
	C220	08T55390W31	TF,	0.15μF
■	C221	08T15807W05	CP.,	0.1μF
▲	C221	08T15807W05	CP.,	0.1μF
	E225	23S61524F13	ELY.,	10μF / 16V
	E227	23S61524F13	ELY.,	10μF / 16V
	E228	23S61524F13	ELY.,	10μF / 16V

Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only,
△ : For 7514L Model Only, Others : Common.

Symbol No.	Part No.	Description	
□	E231	23S61523F12	ELY.,	10μF / 16V
△	E231	23S61523F12	ELY.,	10μF / 16V
□	E232	23S61523F12	ELY.,	10μF / 16V
△	E232	23S61523F12	ELY.,	10μF / 16V
■	E233	23S61523F12	ELY.,	10μF / 16V
▲	E233	23S61523F12	ELY.,	10μF / 16V
■	E234	23S61523F12	ELY.,	10μF / 16V
▲	E234	23S61523F12	ELY.,	10μF / 16V
	E235	23S61523F12	ELY.,	10μF / 16V
	E236	23S61523F12	ELY.,	10μF / 16V
■	E237	23S61523F29	ELY.,	1μF / 50V
▲	E237	23S61523F29	ELY.,	1μF / 50V
■	E238	23S61523F29	ELY.,	1μF / 50V
▲	E238	23S61523F29	ELY.,	1μF / 50V
	E239	23S61523F29	ELY.,	1μF / 50V
	E240	23S61523F29	ELY.,	1μF / 50V
■	E241	23T55405W01	ELY.,	10μF / 16V
▲	E241	23T55405W01	ELY.,	10μF / 16V
	E242	23T55405W01	ELY.,	10μF / 16V
■	E243	23T55405W01	ELY.,	10μF / 16V
▲	E243	23T55405W01	ELY.,	10μF / 16V
	E244	23T55405W01	ELY.,	10μF / 16V
■	E245	23T55378W01	ELY.,	220μF / 10V
▲	E245	23T55378W01	ELY.,	220μF / 10V
	E246	23T55378W01	ELY.,	220μF / 10V
■	E247	23T55377W14	ELY.,	2200μF / 16V
▲	E247	23T55377W14	ELY.,	2200μF / 16V
	E248	23T55377W14	ELY.,	2200μF / 16V
	E301	23S61524F32	ELY.,	1μF / 50V
	E302	23S61524F32	ELY.,	1μF / 50V
□	E303	23S61524F32	ELY.,	1μF / 50V
△	E303	23S61524F32	ELY.,	1μF / 50V
□	E304	23S61524F32	ELY.,	1μF / 50V
△	E304	23S61524F32	ELY.,	1μF / 50V
□	E305	23S61523F12	ELY.,	10μF / 16V
△	E305	23S61523F12	ELY.,	10μF / 16V
□	E306	23S61523F08	ELY.,	100μF / 6.3V
△	E306	23S61523F08	ELY.,	100μF / 6.3V
□	E307	23S61523F05	ELY.,	22μF / 6.3V
△	E307	23S61523F05	ELY.,	22μF / 6.3V
□	E308	23S61524F39	ELY.,	0.68μF / 50V
△	E308	23S61524F39	ELY.,	0.68μF / 50V
□	E309	23S61524F39	ELY.,	0.68μF / 50V
△	E309	23S61524F39	ELY.,	0.68μF / 50V
	E390	23S61523F29	ELY.,	1μF / 50V
	E391	23S61523F29	ELY.,	1μF / 50V
	E398	23S43247F05	ELY.,	1μF / 50V
	E399	23S43247F05	ELY.,	1μF / 50V
■	C501	08T55390W27	TF,	0.068μF
□	C501	08T55390W27	TF,	0.068μF

Symbol No.	Part No.	Description	
■	E501	23S61523F17	ELY.,	4.7μF / 25V
□	E501	23S61523F17	ELY.,	4.7μF / 25V
■	C502	08T55390W27	TF,	0.068μF
□	C502	08T55390W27	TF,	0.068μF
■	E502	23S61524F28	ELY.,	0.1μF / 50V
□	E502	23S61524F28	ELY.,	0.1μF / 50V
■	C503	08T55390W27	TF,	0.068μF
□	C503	08T55390W27	TF,	0.068μF
■	E503	23S61523F29	ELY.,	1μF / 50V
□	E503	23S61523F29	ELY.,	1μF / 50V
■	C504	08S65480F51	CER.,	1500pF
□	C504	08S65480F51	CER.,	1500pF
■	E504	23S61523F25	ELY.,	0.1μF / 50V
□	E504	23S61523F25	ELY.,	0.1μF / 50V
■	C505	08T55390W26	TF,	0.056μF
□	C505	08T55390W26	TF,	0.056μF
■	C506	08T55390W23	TF,	0.033μF
□	C506	08T55390W23	TF,	0.033μF
	E506	23S61523F28	ELY.,	0.47μF / 50V
■	C507	08T55390W25	TF,	0.047μF
□	C507	08T55390W25	TF,	0.047μF
	E507	23S61523F15	ELY.,	47μF / 16V
■	C508	08T55390W25	TF,	0.047μF
□	C508	08T55390W25	TF,	0.047μF
■	C509	08T55390W29	TF,	0.1μF
□	C509	08T55390W29	TF,	0.1μF
	C516	08S65128F47	CP.,	330pF
	C517	08S65128F69	CP.,	0.01μF
	C518	08S65128F19	CP.,	22pF
	C519	08S65128F19	CP.,	22pF
	E520	23S16086W01	ELY.,	220μF / 10V
	C521	23T82372F19	ELY., (B.P)	2.2μF / 50V
■	C522	08S65128F69	CP.,	0.01μF
□	C522	08S65128F69	CP.,	0.01μF
	C801	08S65128F78	CP.,	0.022μF
	E801	23T45365W03	ELY.,	220μF / 10V
	C802	08T15399W03	CP.,	0.047μF
	C803	08S65128F69	CP.,	0.01μF
	E803	23S61523F34	ELY.,	100μF / 10V
	E804	23S61523F34	ELY.,	100μF / 10V
	E807	23S61524F32	ELY.,	1μF / 50V
	E809	23S61524F13	ELY.,	10μF / 16V
	E999	23S61523F15	ELY.,	47μF / 16V

Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only,
△ : For 7514L Model Only, Others : Common.

Symbol No.	Part No.	Description
Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)		
	R001	06S64995F93 47K ohm
	R002	06S64995F53 1K ohm
	R005	06S64995F65 3.3K ohm
	R006	06S64995F53 1K ohm
	R007	06S64995F65 3.3K ohm
	R008	06S64995F53 1K ohm
	R009	06S64995F05 10 ohm
	R010	06S53330F49 680 ohm 1/8W
	R013	06S53330F75 8.2K ohm 1/8W
	R014	06S64995F71 5.6K ohm
■	R020	06S64995F79 12K ohm
▲	R020	06S64995F79 12K ohm
□	R020	06S64995F75 8.2K ohm
△	R020	06S64995F75 8.2K ohm
■	R021	06S64995F79 12K ohm
▲	R021	06S64995F79 12K ohm
□	R021	06S64995F75 8.2K ohm
△	R021	06S64995F75 8.2K ohm
	R022	06S64995F65 3.3K ohm
	R023	06S64995F65 3.3K ohm
■	R024	06S64995F81 15K ohm
▲	R024	06S64995F81 15K ohm
□	R024	06S64995F93 47K ohm
△	R024	06S64995F93 47K ohm
■	R025	06S64995F81 15K ohm
▲	R025	06S64995F81 15K ohm
□	R025	06S64995F93 47K ohm
△	R025	06S64995F93 47K ohm
■	R026	06S64995F75 8.2K ohm
▲	R026	06S64995F75 8.2K ohm
□	R026	06S64995F77 10K ohm
△	R026	06S64995F77 10K ohm
	R027	06S64995F77 10K ohm
	R029	06S64996F02 100K ohm
	R031	06S53330F53 1K ohm 1/8W
	R101	06S64995F41 330 ohm
	R102	06S53330F89 33K ohm 1/8W
	R103	06S64995F93 47K ohm
	R106	06S53330F69 4.7K ohm 1/8W
	R107	06S53330F77 10K ohm 1/8W
	R108	06S53330F77 10K ohm 1/8W
	R109	06S53330F77 10K ohm 1/8W
□	R203	06S53330F52 910 ohm 1/8W
△	R203	06S53330F52 910 ohm 1/8W
□	R204	06S64995F52 910 ohm
△	R204	06S64995F52 910 ohm
■	R224	06S64995F73 6.8K ohm
▲	R224	06S64995F65 3.3K ohm

Symbol No.	Part No.	Description
□	R224	06S64995F75 8.2K ohm
△	R224	06S64995F75 8.2K ohm
■	R226	06S64995F73 6.8K ohm
▲	R226	06S64995F65 3.3K ohm
□	R226	06S64995F75 8.2K ohm
△	R226	06S64995F75 8.2K ohm
■	R227	06S64995F73 6.8K ohm
▲	R227	06S64995F65 3.3K ohm
□	R227	06S64995F75 8.2K ohm
△	R227	06S64995F75 8.2K ohm
	R228	06S64995F85 22K ohm
	R229	06S64995F85 22K ohm
	R230	06S64995F85 22K ohm
	R231	06S64995F85 22K ohm
□	R238	06S64995F37 220 ohm
△	R238	06S64995F37 220 ohm
□	R239	06S64995F37 220 ohm
△	R239	06S64995F37 220 ohm
□	R242	06S64995F85 22K ohm
△	R242	06S64995F85 22K ohm
□	R243	06S64995F85 22K ohm
△	R243	06S64995F85 22K ohm
□	R244	06S53330F29 100 ohm 1/8W
△	R244	06S53330F29 100 ohm 1/8W
□	R245	06S53330F29 100 ohm 1/8W
△	R245	06S53330F29 100 ohm 1/8W
■	R246	06S64995F37 220 ohm
▲	R246	06S64995F37 220 ohm
■	R247	06S53330F37 220 ohm 1/8W
▲	R247	06S53330F37 220 ohm 1/8W
	R248	06S64995F37 220 ohm
	R249	06S53330F37 220 ohm 1/8W
■	R254	06S64995F67 3.9K ohm
▲	R254	06S64995F67 3.9K ohm
■	R255	06S64995F67 3.9K ohm
▲	R255	06S64995F67 3.9K ohm
	R256	06S64995F67 3.9K ohm
	R257	06S64995F67 3.9K ohm
■	R258	06S64995F29 100 ohm
▲	R258	06S64995F29 100 ohm
■	R259	06S53330F29 100 ohm 1/8W
▲	R259	06S53330F29 100 ohm 1/8W
■	R260	06S64995F29 100 ohm
▲	R260	06S64995F29 100 ohm
□	R260	06S64995F65 3.3K ohm
△	R260	06S64995F65 3.3K ohm
■	R261	06S64995F29 100 ohm
▲	R261	06S64995F29 100 ohm
□	R261	06S64995F65 3.3K ohm
△	R261	06S64995F65 3.3K ohm

Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only, △ : For 7514L Model Only, Others : Common.

Symbol No.	Part No.	Description
■ R262	06S64995F65	3.3K ohm
▲ R262	06S64995F65	3.3K ohm
■ R263	06S64995F65	3.3K ohm
▲ R263	06S64995F65	3.3K ohm
■ R264	06S64995F65	3.3K ohm
▲ R264	06S64995F65	3.3K ohm
□ R264	06S64995F61	2.2K ohm
△ R264	06S64995F61	2.2K ohm
■ R265	06S64995F65	3.3K ohm
▲ R265	06S64995F65	3.3K ohm
□ R265	06S64995F61	2.2K ohm
△ R265	06S64995F61	2.2K ohm
■ R266	06S64995F55	1.2K ohm
▲ R266	06S64995F55	1.2K ohm
■ R267	06S64995F55	1.2K ohm
▲ R267	06S64995F55	1.2K ohm
■ R268	06S64995F55	1.2K ohm
▲ R268	06S64995F55	1.2K ohm
□ R268	06S64995F45	470 ohm
△ R268	06S64995F45	470 ohm
■ R269	06S64995F55	1.2K ohm
▲ R269	06S64995F55	1.2K ohm
□ R269	06S64995F45	470 ohm
△ R269	06S64995F45	470 ohm
■ R270	06S53331F40	2.2 ohm 1/8W
▲ R270	06S53331F40	2.2 ohm 1/8W
■ R271	06S53331F40	2.2 ohm 1/8W
▲ R271	06S53331F40	2.2 ohm 1/8W
■ R272	06S53331F40	2.2 ohm 1/8W
▲ R272	06S53331F40	2.2 ohm 1/8W
■ R273	06S53331F40	2.2 ohm 1/8W
▲ R273	06S53331F40	2.2 ohm 1/8W
R274	06S53331F40	2.2 ohm 1/8W
R275	06S53331F40	2.2 ohm 1/8W
R277	06S53331F40	2.2 ohm 1/8W
□ R301	06S53330F92	43K ohm 1/8W
△ R301	06S53330F92	43K ohm 1/8W
□ R302	06S64995F85	22K ohm
△ R302	06S64995F85	22K ohm
□ R303	06S53330F69	4.7K ohm 1/8W
△ R303	06S53330F69	4.7K ohm 1/8W
■ R501	06S64996F10	220K ohm
□ R501	06S64996F10	220K ohm
■ R502	06S64995F43	390 ohm
□ R502	06S64995F43	390 ohm
■ R503	06S64996F22	680K ohm
□ R503	06S64996F22	680K ohm
■ R504	06S64996F02	100K ohm
□ R504	06S64996F02	100K ohm
■ R505	06S64995F69	4.7K ohm

Symbol No.	Part No.	Description
□ R505	06S64995F69	4.7K ohm
■ R506	06S53330F69	4.7K ohm 1/8W
□ R506	06S53330F69	4.7K ohm 1/8W
■ R507	06S64995F97	68K ohm
□ R507	06S64995F97	68K ohm
■ R508	06S64995F93	47K ohm
□ R508	06S64995F93	47K ohm
■ R511	06S64996F22	680K ohm
□ R511	06S64996F22	680K ohm
■ R512	06S64996F04	120K ohm
□ R512	06S64996F04	120K ohm
■ R513	06S64995F97	68K ohm
□ R513	06S64995F97	68K ohm
■ R514	06S53330F77	10K ohm 1/8W
□ R514	06S53330F77	10K ohm 1/8W
■ R515	06S64996F10	220K ohm
□ R515	06S64996F10	220K ohm
■ R516	06S64995F91	39K ohm
□ R516	06S64995F91	39K ohm
■ R517	06S64995F77	10K ohm
□ R517	06S64995F77	10K ohm
■ R518	06S64995F97	68K ohm
□ R518	06S64995F97	68K ohm
R533	06S64995F85	22K ohm
R534	06S64995F85	22K ohm
R535	06T70072F37	220 ohm 1/4W
R537	06S53330F85	22K ohm 1/8W
R538	06S64995F53	1K ohm
R539	06S64995F77	10K ohm
■ R551	06S64995F87	27K ohm
□ R551	06S64996F12	270K ohm
■ R552	06S64995F87	27K ohm
□ R552	06S64996F12	270K ohm
■ R555	06S64995F93	47K ohm
□ R555	06S64995F93	47K ohm
R556	06S64995F93	47K ohm
R557	06S64995F93	47K ohm
R559	06S64995F85	22K ohm
R562	06S64995F93	47K ohm
R563	06S64995F93	47K ohm
R801	06S64995F65	3.3K ohm
R802	06S64995F65	3.3K ohm
R803	06S53330F61	2.2K ohm 1/8W
R804	06S64995F77	10K ohm
R805	06S53330F53	1K ohm 1/8W
R807	06T70072F53	1K ohm 1/4W
R812	06S53330F77	10K ohm 1/8W
R813	06S64995F69	4.7K ohm
R815	06S53330F69	4.7K ohm 1/8W
R816	06S53330F65	3.3K ohm 1/8W

Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only, △ : For 7514L Model Only, Others : Common.

Symbol No.	Part No.	Description
	R818	06S53330F77 10K ohm 1/8W
	R819	06S53330F61 2.2K ohm 1/8W
	R820	06S64995F77 10K ohm
	R824	06S64995F77 10K ohm
	R826	06S64995F77 10K ohm
	R828	06S53330F77 10K ohm 1/8W
	R832	06S64996F02 100K ohm
	R834	06S64996F02 100K ohm
■	R998	06S64995F69 4.7K ohm
□	VR101	18T15356W13 Variable, 10K ohm
△	VR101	18T15356W13 Variable, 10K ohm
□	VR102	18T15356W13 Variable, 10K ohm
△	VR102	18T15356W13 Variable, 10K ohm
■	VR501	18T81060F04 Variable, 330 ohm
□	VR501	18T81060F04 Variable, 330 ohm

Front P. C. Board

IC's

	IC401	51T16618W02	MC14014BFEL
	IC402	51T83905F03	LC7582W

Diode

	D401	48T94471F01	IMN10

LED

	LD402	48T16167W02	MBG4868K (GRN)

Lamps

	PL401	65T55442W01	6.7V-85mA
	PL403	65T45353W02	6V-70mA
	PL404	65T45353W02	6V-70mA
	PL405	65T45353W02	6V-70mA
	PL406	65T45353W02	6V-70mA

Symbol No.	Part No.	Description
Switches		
	S401	40T55182W01 Tact, SKHVBC (UP / FF)
	S403	40T55182W01 Tact, SKHVBC (DN / REW)
	S405	40T55182W01 Tact, SKHVBC (DX · A.MEMO / REPEAT)
■	S406	40T55182W01 Tact, SKHVBC (SDK / M.I.X.)
▲	S406	40T55182W01 Tact, SKHVBC (P.SCAN / M.I.X.)
□	S406	40T55182W01 Tact, SKHVBC (SDK / M.I.X.)
△	S406	40T55182W01 Tact, SKHVBC (P.SCAN / M.I.X.)
■	S407	40T55182W01 Tact, SKHVBC (3)
▲	S407	40T55182W01 Tact, SKHVBC (3)
□	S407	40T55182W01 Tact, SKHVBC (3 / P.S. UP)
△	S407	40T55182W01 Tact, SKHVBC (3 / P.S. UP)
■	S408	40T55182W01 Tact, SKHVBC (2)
▲	S408	40T55182W01 Tact, SKHVBC (2)
□	S408	40T55182W01 Tact, SKHVBC (2 / P.S. DN)
△	S408	40T55182W01 Tact, SKHVBC (2 / P.S. DN)
■	S409	40T55182W01 Tact, SKHVBC (1)
▲	S409	40T55182W01 Tact, SKHVBC (1)
□	S409	40T55182W01 Tact, SKHVBC (1 / DOLBY)
△	S409	40T55182W01 Tact, SKHVBC (1 / DOLBY)
	S410	40T55182W01 Tact, SKHVBC (5 / H)
	S411	40T55182W01 Tact, SKHVBC (6 / PROG / M)
■	S412	40T55182W01 Tact, SKHVBC (4 / CT)
▲	S412	40T55182W01 Tact, SKHVBC (4 / CT)
□	S412	40T55182W01 Tact, SKHVBC (4 / B.SKIP / CT)
△	S412	40T55182W01 Tact, SKHVBC (4 / B.SKIP / CT)
□	S413	40T83612F01 Tact, SKHFAD (DOWN)
△	S413	40T83612F01 Tact, SKHFAD (DOWN)
□	S414	40T83612F01 Tact, SKHFAD (UP)
△	S414	40T83612F01 Tact, SKHFAD (UP)
	S416	40T55182W01 Tact, SKHVBC (MODE / LOUD)
	S417	40T55182W01 Tact, SKHVBC (CLOCK)
	S418	40T55182W01 Tact, SKHVBC (EJECT)
	S419	40T55182W01 Tact, SKHVBC (PWR)
	S420	40T55182W01 Tact, SKHVBC (TAPE PLAY / PAUSE)
	S421	40T55182W01 Tact, SKHVBC (DISC PLAY / PAUSE)
	S422	40T55182W01 Tact, SKHVBC (TUNER / BAND / D.A.P.)
■	S423	40T55182W01 Tact, SKHVBC (DOWN)
▲	S423	40T55182W01 Tact, SKHVBC (DOWN)
■	S424	40T55182W01 Tact, SKHVBC (UP)
▲	S424	40T55182W01 Tact, SKHVBC (UP)

Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only, △ : For 7514L Model Only, Others : Common.

Symbol No.	Part No.	Description
Capacitors		
C401	08T15399W03	CP., 0.047µF
E401	23S61523F05	ELY., 22µF / 6.3V
C402	08S65128F55	CP., 680pF
C403	08T15399W03	CP., 0.047µF
Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)		
R401	06S64995F77	10K ohm
R402	06S64995F77	10K ohm
R403	06S64995F77	10K ohm
R404	06S64995F77	10K ohm
R405	06S64995F77	10K ohm
R406	06S64995F77	10K ohm
R407	06S64995F77	10K ohm
R410	06S64995F93	47K ohm
R411	06S64995F93	47K ohm
R412	06S64995F93	47K ohm
R413	06S64995F93	47K ohm
R414	06S64995F93	47K ohm
R415	06S64995F93	47K ohm
R416	06S64995F93	47K ohm
R417	06S64995F93	47K ohm
R419	06S64995F93	47K ohm
R421	06T70072F24	62 ohm 1/4W
R422	06T70072F21	47 ohm 1/4W
R423	06T70072F49	680 ohm 1/4W
■▲ GR Control P. C. Board		
IC's		
IC1201	51T64606F02	TA7705F
IC1701	51T25621W02	AN6275NK
Transistor / Diode		
Q1701	48T84366F05	2SB1243
D1201	48T44813F01	Diode, MA165TA

Symbol No.	Part No.	Description
Capacitors		
C1201	08S53332F31	CP., 470pF
E1201	23S82482F02	ELY., 100µF / 16V
C1202	08S53332F31	CP., 470pF
E1202	23S61523F12	ELY., 10µF / 16V
C1203	08S53332F31	CP., 470pF
E1203	23S61523F07	ELY., 47µF / 6.3V
C1204	08S53332F31	CP., 470pF
E1204	23S61523F07	ELY., 47µF / 6.3V
C1205	08S53332F48	CP., 0.012µF
E1205	23S61523F17	ELY., 4.7µF / 25V
C1206	08S53332F48	CP., 0.012µF
E1206	23S61523F17	ELY., 4.7µF / 25V
Resistors (All resistors are chip 1/8W±5% unless otherwise noted.)		
R1201	06S53330F29	100 ohm
R1202	06S53330F65	3.3K ohm
R1203	06S53330F32	130 ohm
R1204	06S53330F32	130 ohm
R1205	06S64996F14	330K ohm1/10W
R1206	06S64996F14	330K ohm1/10W
R1207	06S64995F78	11K ohm1/10W
R1208	06S53330F78	11K ohm
R1209	06S53330F81	15K ohm
R1210	06S53330F81	15K ohm
R1211	06S53330F65	3.3K ohm
□△ GR Control P. C. Board		
IC's / Transistors		
IC1501	51T25621W02	IC, AN6275NK
IC1502	51T67915F01	IC, M51143AL
Q1501	48T84366F05	2SB1243
Q1502	48T94606F12	CP., DTC144TU
Capacitors		
E1501	23S61524F32	ELY., 1µF / 50V
C1502	08T35374W01	CP., 0.1µF

Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only, △ : For 7514L Model Only, Others : Common.

Symbol No.	Part No.	Description
C1503	08T35374W01	CP., 0.1µF
C1504	08T35374W01	CP., 0.1µF
C1505	08S65128F15	CP., 15pF
Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)		
R1501	06S64995F77	10K ohm
R1502	06S64995F77	10K ohm
R1503	06S64996F10	220K ohm
R1504	06S64996F26	1M ohm
R1505	06S64996F18	470K ohm
R1506	06S64996F01	91K ohm
□△ GR Audio P. C. Board		
IC / Diode		
IC1201	51T15146W01	IC, TA7705P
D1201	48T44813F01	MA165TA
Capacitors		
E1201	23S61524F13	ELY., 10µF / 16V
C1202	08S72783F27	CP., 220pF
E1202	23S61524F08	ELY., 100µF / 6.3V
C1203	08S72783F27	CP., 220pF
E1203	23S61524F08	ELY., 100µF / 6.3V
C1204	08S72783F27	CP., 220pF
E1204	23S82482F02	ELY., 100µF / 16V
C1205	08S72783F27	CP., 220pF
E1205	23S61524F18	ELY., 4.7µF / 25V
E1206	23S61524F18	ELY., 4.7µF / 25V
C1208	08T35122W02	TF, 0.012µF
C1209	08T35122W02	TF, 0.012µF
Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)		
R1201	06S53330F29	100 ohm 1/8W
R1202	06S53330F32	130 ohm 1/8W
R1203	06S53330F32	130 ohm 1/8W

Symbol No.	Part No.	Description
R1204	06S64996F14	330K ohm
R1205	06S64996F14	330K ohm
R1208	06S64995F79	12K ohm
R1209	06S64995F79	12K ohm
R1210	06S64995F81	15K ohm
R1211	06S64995F81	15K ohm
R1212	06S64995F65	3.3K ohm
R1213	06S53330F65	3.3K ohm 1/8W
R1214	06S53330F85	22K ohm 1/8W
R1215	06S64995F85	22K ohm
Miscellaneous		
CB401	09T45337W03	17Pin Connector
CH401	09T45338W01	17Pin Connector
ET001	01T15513W04	Antenna Receptacle
□ ET201	01T55244W03	RCA Output Connector
△ ET201	01T55244W03	RCA Output Connector
ET202	09T55175W16	SP. Output & Power Supply Connector
■ HD1101	88T10373W01	Head
▲ HD1101	88T10373W01	Head
□ HD1101	88T15971W01	Head
△ HD1101	88T15971W01	Head
JK502	09T92817F02	DIN Connector
LCD401	65T55137W01	LCD Display
■ M1501	01V53200W99	Assy., Main Motor (13.2V-105mA)
▲ M1501	01V53200W99	Assy., Main Motor (13.2V-105mA)
□ M1501	01V51800W42	Assy., Main Motor (13.2V-105mA)
△ M1501	01V51800W42	Assy., Main Motor (13.2V-105mA)
PT1501	51T15144W01	Sensor, Photo ON2170-R
S1501	40T15222W01	Switch, Detector (PACK IN)
S1502	40T15382W01	Switch, Detector (PACK DOWN)
S1503	40T15382W01	Switch, Detector (METAL)
SD1501	01T10369W02	Assy., Eject Solenoid
SD1502	01T15249W01	Assy., Play Solenoid
SD1503	01T10371W01	Assy., RF Solenoid

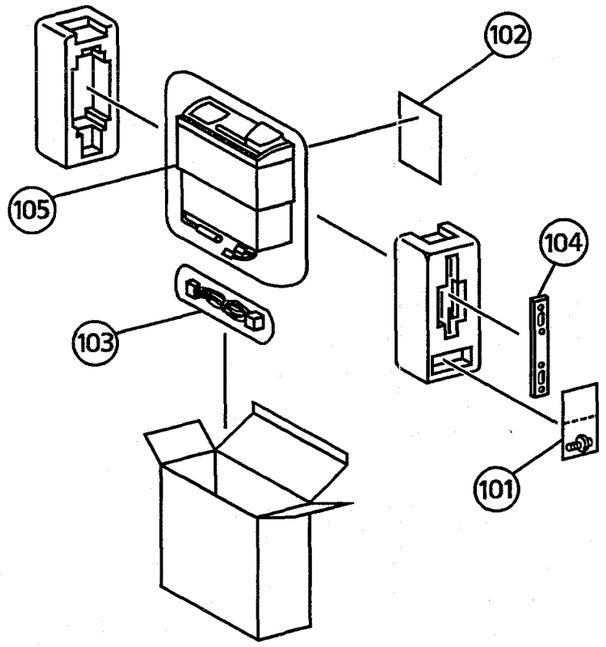
Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only, △ : For 7514L Model Only, Others : Common.

Packing Assembly Parts List

Symbol No.	Part No.	Description
101-1	02B47353F01	Nut, Hex. (M5)
101-2	03S72235F42	Screw, Countersink (M5×8)
101-3	46A42363F01	Stud, Bolt
102	68P50390W09	Owner's Manual
103	01T55176W05	Assy., Power Supply Connector
104	07B64552F01	Bracket, Strap Receiver
105	15D50406W01	Case, Inner

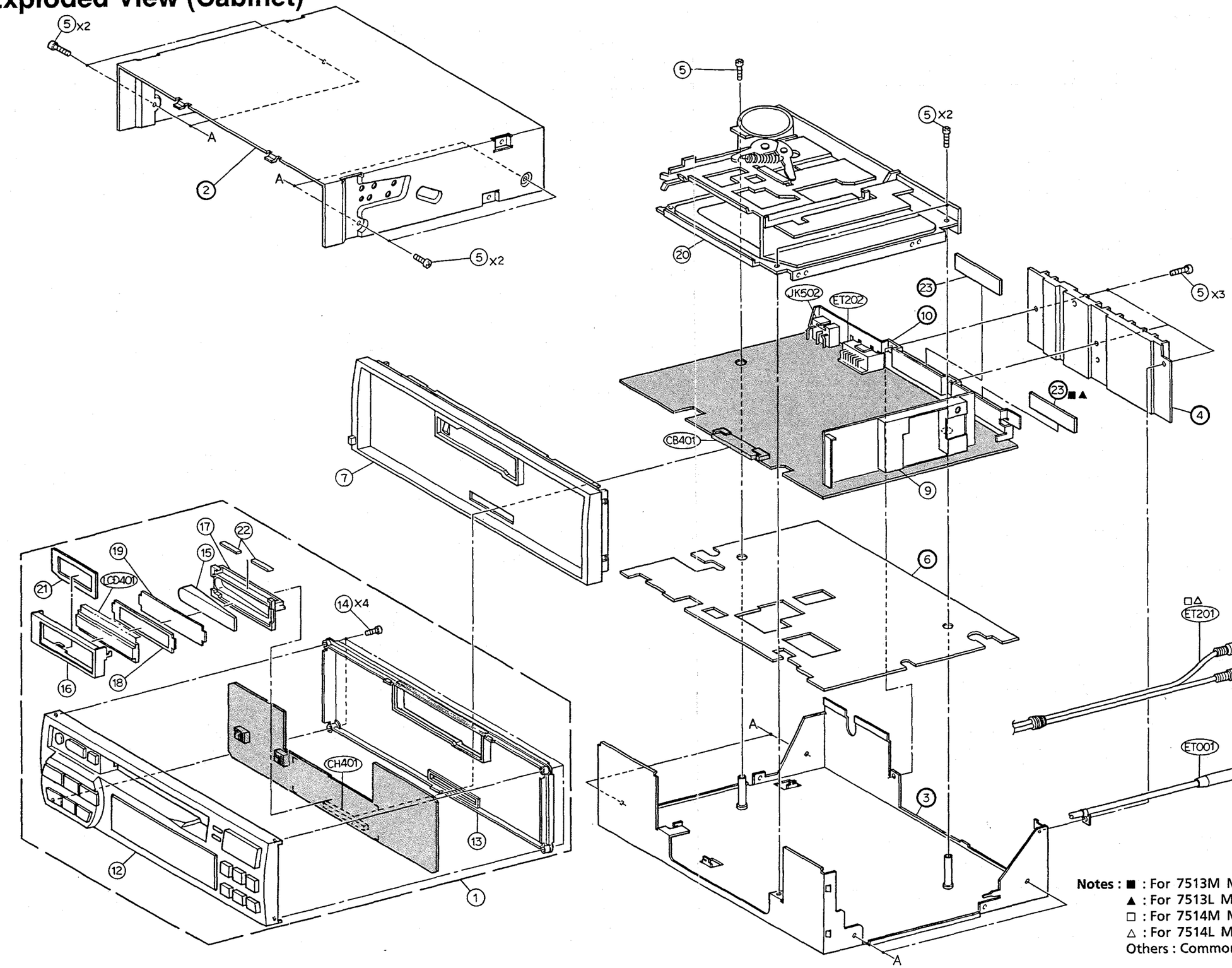
Symbol No.	Part No.	Description

Packing Method View



7513M/7513L	7513M/7513L
7514M/7514L	7514M/7514L

Exploded View (Cabinet)



Notes : ■ : For 7513M Model Only,
▲ : For 7513L Model Only,
□ : For 7514M Model Only,
△ : For 7514L Model Only,
Others : Common.

Cabinet Assembly Parts List

Notes : ● No parts number on parts list are not supplied.
● Parts marked * will need a long delivery time, or may be not supplied in some cases.

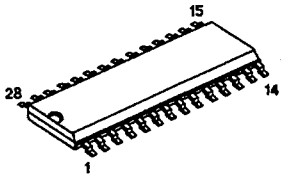
Symbol No.		Index	Part No.	Description
■	*1	5-C	01V53400W25	Assy., Nose Unit
▲	*1	5-C	01V51400W49	Assy., Nose Unit
□	*1	5-C	01V51700W19	Assy., Nose Unit
△	*1	5-C	01V53300W18	Assy., Nose Unit
	5		03S44205G29	Screw, Pan (M2.6×6)
■	7	3-C	13C50289W04	Assy., Front Escutcheon
▲	7	3-C	13C50289W04	Assy., Front Escutcheon
□	7	3-C	13C50289W01	Assy., Front Escutcheon
△	7	3-C	13C50289W01	Assy., Front Escutcheon
	9	3-F	77B50556W01	FM/MW/LW Tuner, MB4R1020 (FE001)
■	12	5-B	13D50308W08	Assy., Nosepiece
▲	12	5-B	13D50308W05	Assy., Nosepiece
□	12	5-B	13D50308W02	Assy., Nosepiece
△	12	5-B	13D50308W07	Assy., Nosepiece
	13	5-C	13D50288W01	Nose, Bottom
	14	4-C	03S68555F36	Screw, Pan (M2×10)
	15	4-B	61A50305W01	Lens, LCD
	16	4-A	15A50311W01	Cover, LCD
	17	3-B	15B50312W01	Case, LCD
	18	4-B	26A51270W01	Reflector, Sheet (P)
	19	3-B	26A51270W02	Reflector, Sheet (P)
■	*20	2-E	81D50232W01	Cassette Deck, GR75H110
▲	*20	2-E	81D50232W01	Cassette Deck, GR75H110
□	*20	2-E	81D40887W02	Cassette Deck, GR75H120
△	*20	2-E	81D40887W02	Cassette Deck, GR75H120
	21	3-A	14A58079W01	Insulator, LCD
	22	3-B	14S51152W05	Insulator

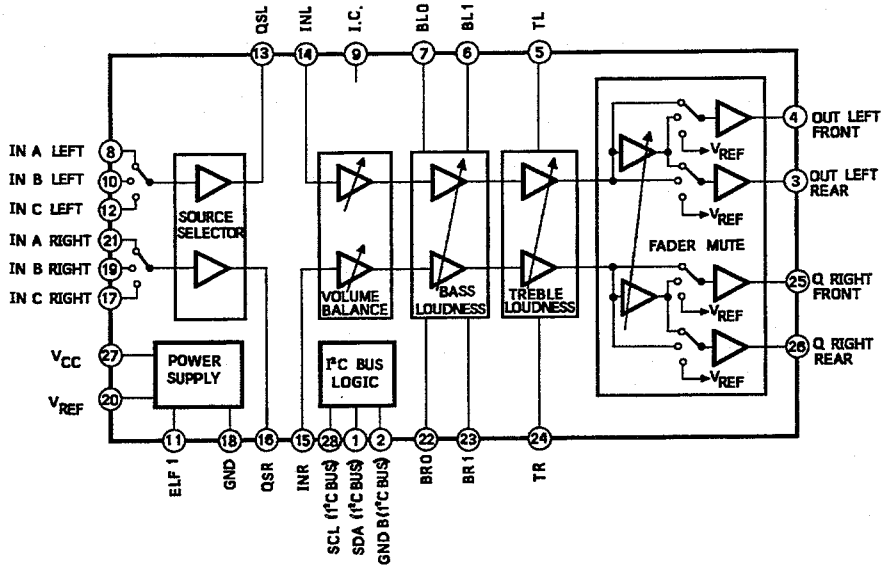
Symbol No.	Index	Part No.	Description

Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only, △ : For 7514L Model Only, Others : Common.

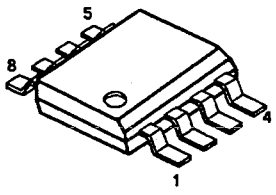
Semi - Conductor Lead Identifications

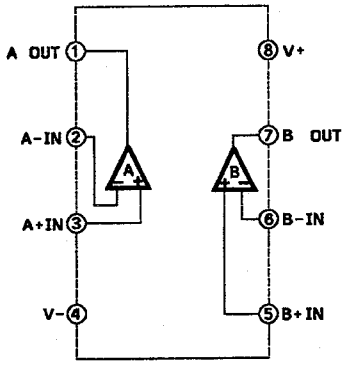
TEA6300T : IC201



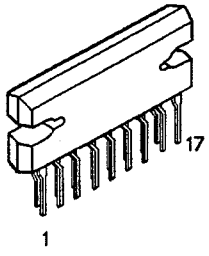


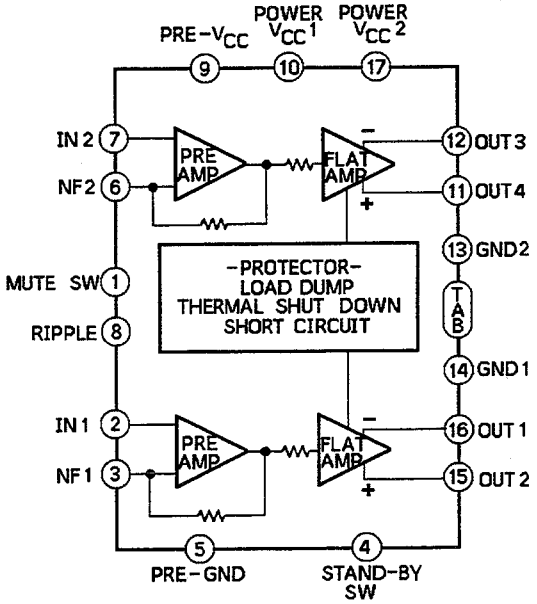
NJM4558M : IC208





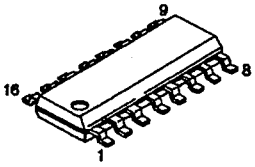
■▲**TA8215H** : IC210, 211
□△**TA8215H** : IC211

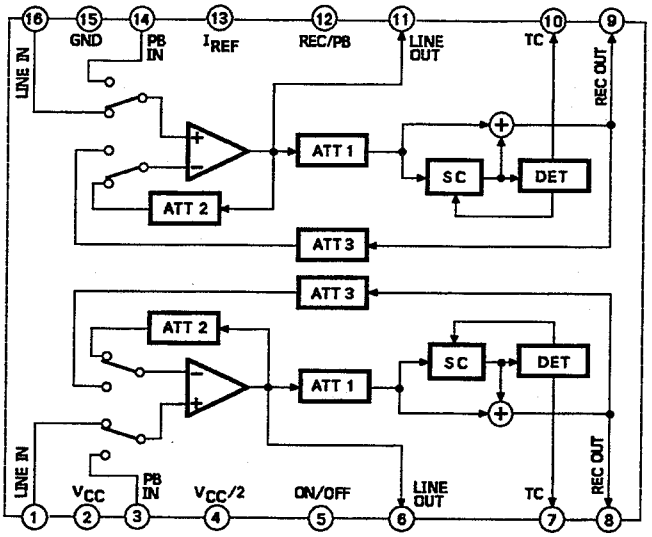




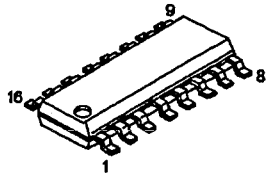
Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only,
△ : For 7514L Model Only, Others : Common.

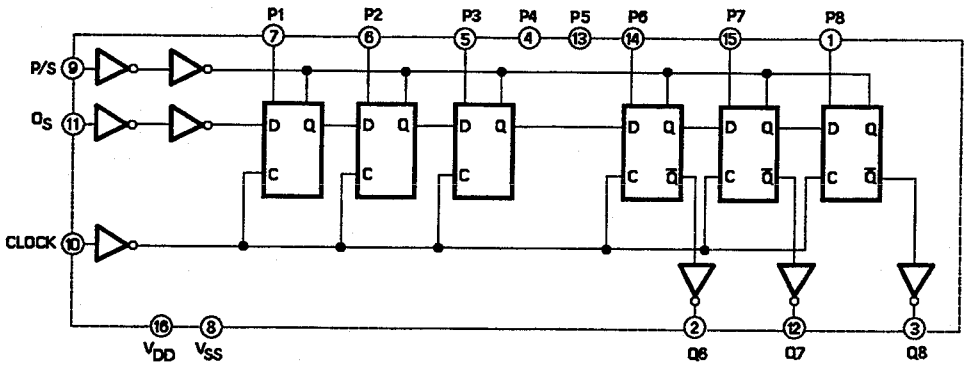
□△CXA1163M : IC301



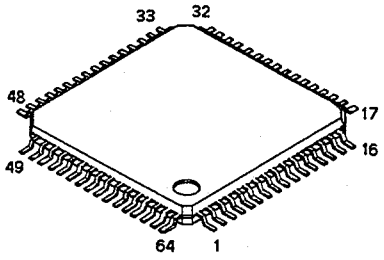


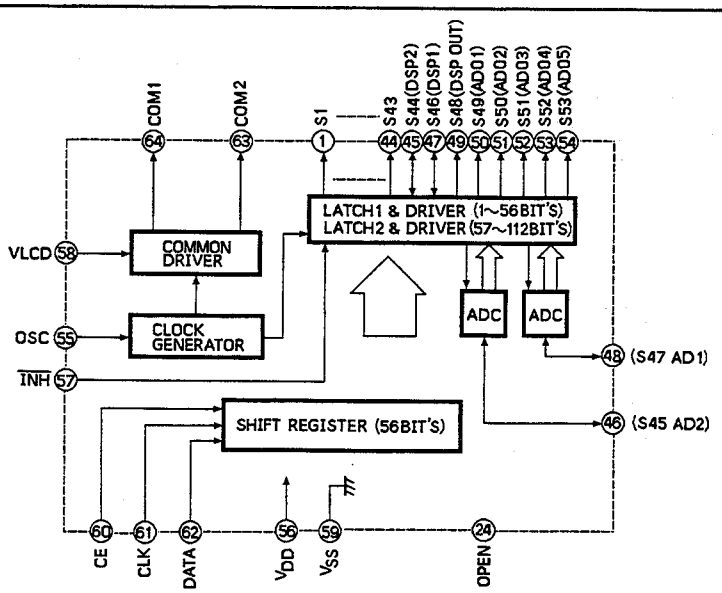
MC14014BFEL : IC401





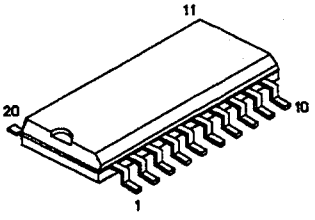
LC7582W : IC402

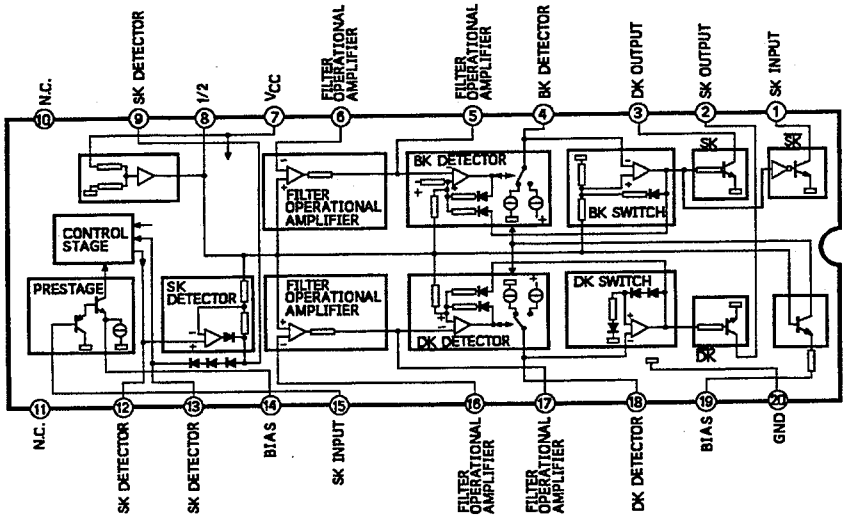




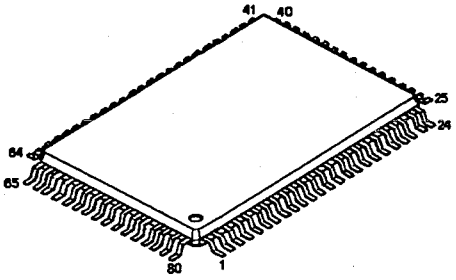
Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only,
△ : For 7514L Model Only, Others : Common.

■□TDA1579T : IC501



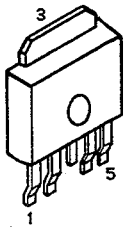


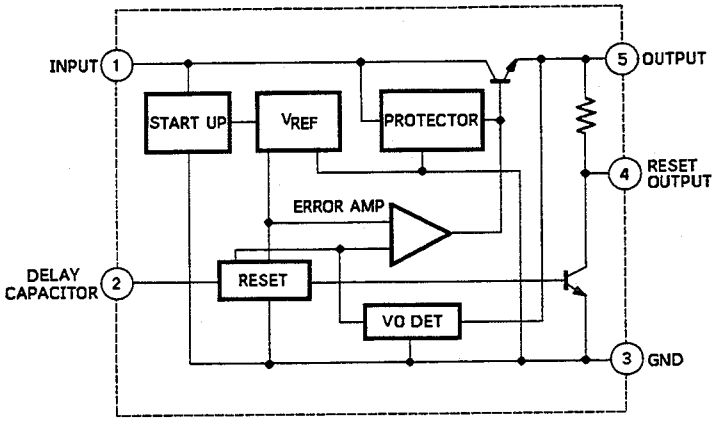
55359W02 : IC503



PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O
1	KEY IN	I	21	ALARM	O	41	V_{DD2}	—	61	NC	—
2	$\overline{ST}$	I	22	EJ SOL	O	42	NC	—	62	NC	—
3	EV DATA	I/O	23	O.MOTOR	O	43	NC	—	63	NC	—
4	EV CLK	O	24	F/$\overline{R}$	O	44	NC	—	64	NC	—
5	SK	I	25	LEV. O FAST	O	45	L/$\overline{D}$	O	65	NC	—
6	DK	I	26	FM IF	I	46	LW	O	66	NC	—
7	$\overline{DOLBY\ B}$	O	27	AM IF	I	47	$\overline{REQ}$	O	67	P.ANT	O
8	GND	—	28	SD	I	48	$\overline{LW}$	O	68	LCD+B ON	O
9	GND	—	29	S METER	I	49	FM/$\overline{AM}$	O	69	NOSE P.	O
10	CHG.D.OUT	O	30	V_{DD1}	—	50	NC	—	70	$\overline{MUTE}$	O
11	CHG.D.IN	I	31	AM OSC	I	51	NC	—	71	POWER IC ON	O
12	ACC	I	32	FM OSC	I	52	NC	—	72	POWER CONT	O
13	BATT	I	33	GND	—	53	NC	—	73	NC	—
14	PACK DOWN	I	34	X OUT	O	54	$\overline{LCD\ INH}$	O	74	NC	—
15	RUN DET	I	35	X IN	I	55	LCD CE	O	75	$\overline{NOSE\ ON}$	I
16	PACK IN	I	36	EO	O	56	LCD DATA	O	76	MODEL 1	I
17	MS DET	I	37	NC	—	57	LCD CLK	O	77	MODEL 0 /AREA 1	I
18	PLAY SOL	O	38	NC	—	58	KEY P/$\overline{S}$	O	78	AREA 0	I
19	RF SOL	O	39	NC	—	59	NC	—	79	GND	—
20	MOTOR CONT	O	40	NC	—	60	NC	—	80	GND	—

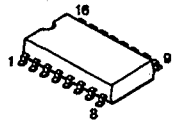
L78LR05EFA : IC801

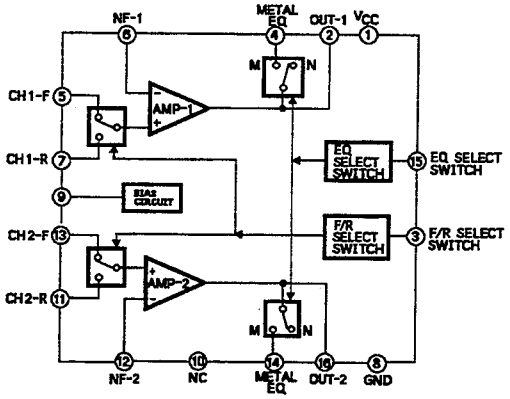




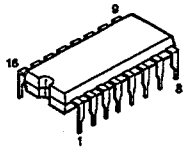
Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only, △ : For 7514L Model Only, Others : Common.

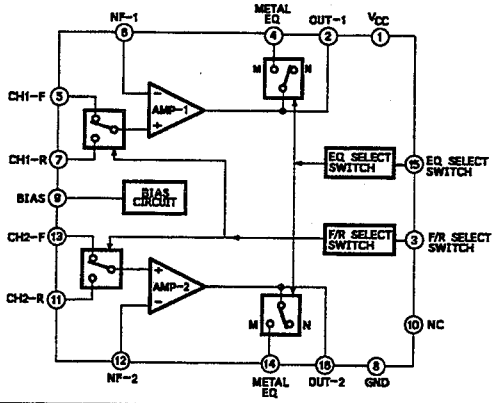
■▲**TA7705F** : IC1201 (GR75H110)



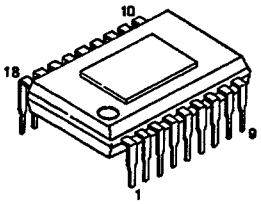


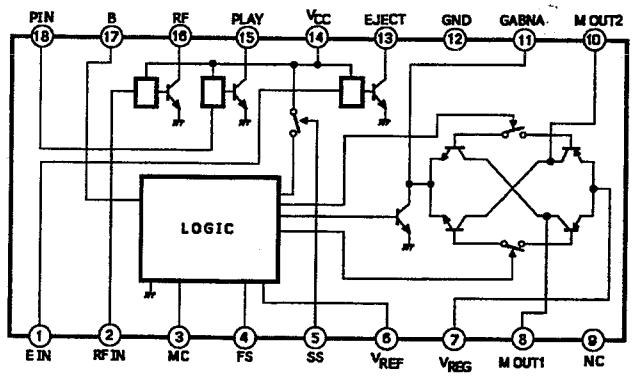
□△**TA7705P** : IC1201 (GR75H120)



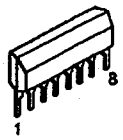


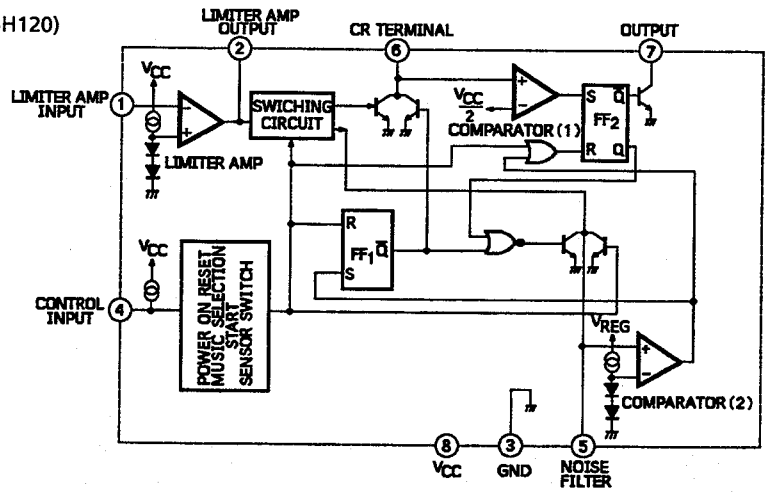
■▲**AN6275NK** : IC1701 (GR75H110)
□△**AN6275NK** : IC1501 (GR75H120)





□△**M51143AL** : IC1502 (GR75H120)





Notes : ■ : For 7513M Model Only, ▲ : For 7513L Model Only, □ : For 7514M Model Only, △ : For 7514L Model Only, Others : Common.

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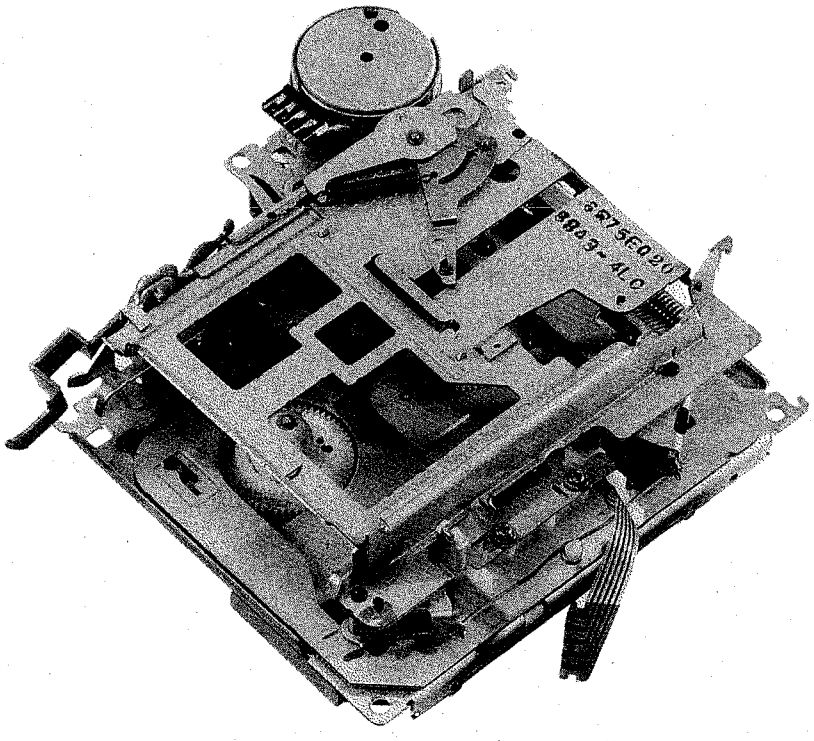
SERVICE MANUAL

Cassette Deck Mechanism

ADDENDUM & REVISED(V)



GR/GR-Y SERIES

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List of Usable Lock Washers

	SIZE	PARTS NO.	QUANTITY			
			GR75E Series	GR75L Series	GR-Y Series	GR75H Series
1	(M1.2 × 3.5 × 0.25)	04B41345P01	4	4	4	2
2	(M1.7 × 3.5 × 0.25)	04B41345P02	1	1	1	4
3	(M1.2 × 2.5 × 0.25)	04B41345P11	8	8	8	9
4	(M1.7 × 3.5 × 0.35)	04B41345P12	2	2	2	2
5	(M1.2 × 3.5 × 0.35)	04B41345P15	2	2	2	2
6	(M1 × 2.5 × 0.25)	04B41345P17	1	1	1	2
7	(M2.6 × 5 × 0.25)	04B41345P29	1	1	1	1
8	(M3.1 × 8 × 0.05)	04B41345P30	1	1	1	1
9	(M3.1 × 5 × 0.35)	04B41345P32	2	2	2	2
10	(M1.2 × 2.5 × 0.3)	04B41345P34	1	1	1	0
11	(M1.7 × 2.8 × 0.25)	04B41345P35	1	1	1	2
12	(M2.1 × 4 × 0.25)	04B41345P37	1	1	1	0
13	(M2.1 × 4 × 0.13)	04S40075G05	2	2	2	0
14	(M2.1 × 4 × 0.3)	04S40075G58	0	0	0	1

List of Usable Oil

1) Molykote G paste
2) Grease EM-30L
3) Grease PG-671

List of Usable Jigs

1) GR bottom gear jig (Part No. 44A20788W01)
2) Head height adjustment gauge
   AI-500 (Part No. AI-500)

Memo

Disassembly, Assembly and Replacement of Functional Parts

1. Disassembly and Assembly of Bottom Cover

(1) Turn the mechanism around as shown in Figure 1.
(2) Remove M1 lock washer ① as shown in Figure 1.
(3) Remove three screws ② as shown in Figure 1.
(4) Lift the bottom cover slowly from the position Ⓐ-1, pull the hooks out of the holes in the chassis, and remove the bottom cover as shown in Figure 1.
(5) When remounting the bottom cover, first turn the front of the mechanism up as shown in Figure 2.
(6) Slide the slider in the direction Ⓐ-2 as shown in Figure 2.
(7) Push down the cassette holder in the direction Ⓐ-3 as shown in Figure 2.
(8) Pull the door pin in the direction Ⓐ-4 so that the mechanism is locked in as shown in Figure 2.
(9) Turn the mechanism around as shown in Figure 3.
(10) Pull the automatic metal lever in the direction Ⓐ-5 and the RF solenoid chip in the direction Ⓐ-6 as shown in Figure 3.
(11) Insert the hooks of the bottom cover into the chassis in the direction Ⓐ-7, and then join the part Ⓐ-8 of the bottom cover to the chassis slowly, making sure that the 3 points indicated with the straight lines in the Figure 3 are fitted properly.
If there are troubles in mounting the bottom cover, do not apply force but remove the bottom cover once again and check the positions of the individual parts. (Refer to Figure 3.)
(12) Since the hooks marked Ⓐ-8 will be lifted slightly as shown in Figure 4, insert the jig through the hole Ⓐ-9, and fix it turning the jig slightly in the direction Ⓐ-11.
Instead of operation (12), turn the gear nose slowly with a precision screwdriver etc., taking care not to damage it.
After 2 to 3 turns, it will click into place.
(Refer to Figures 4 and 5.)
(13) Fix the screws and the lock washer that have been removed.

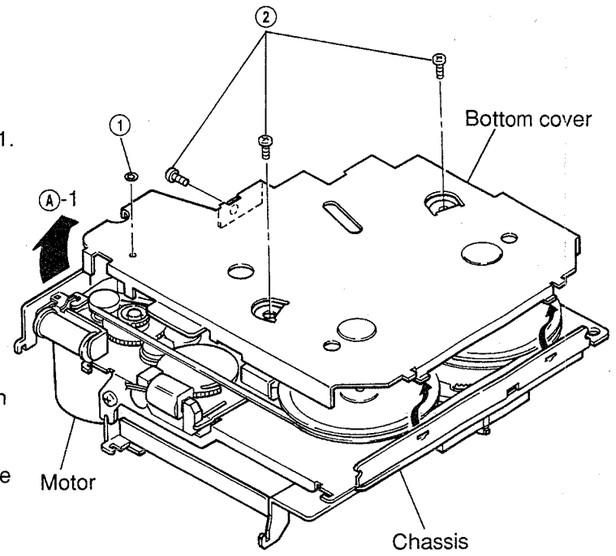


Figure 1

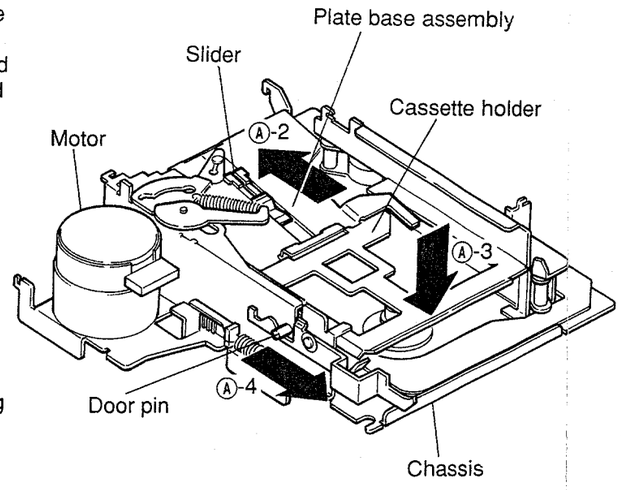


Figure 2

(14) Insert the jig into the hole Ⓐ-9 as shown in Figure and rotate the eject solenoid counterclockwise about 20 times, pulling it in the direction Ⓐ-10 with the finger.
Then the eject operation is completed.
Instead of operation (14), the eject operation can be performed by mounting the mechanism to the product. (Refer to Figures 4 and 5.)

Note: Do not reuse the used lock washers for mounting.
When turning the mechanism, be careful not to drop the gear and the flywheel.
Fasten the three screws with a fastening torque of 6 kg.cm.

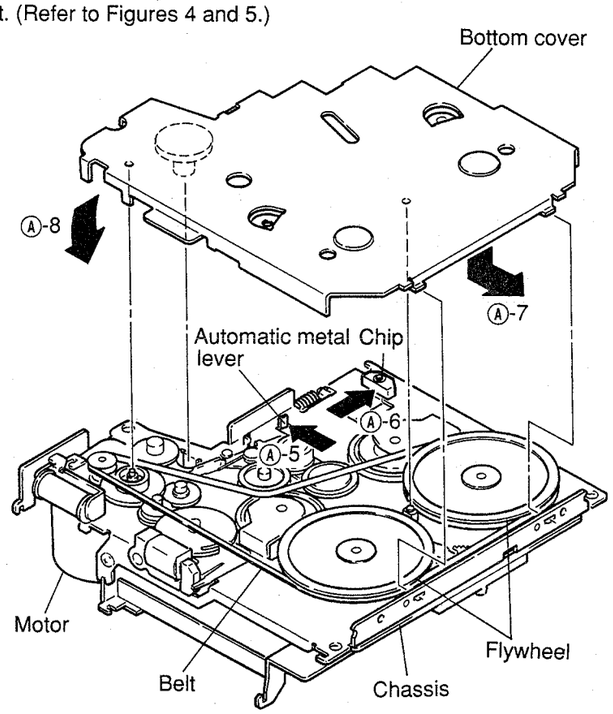


Figure 3

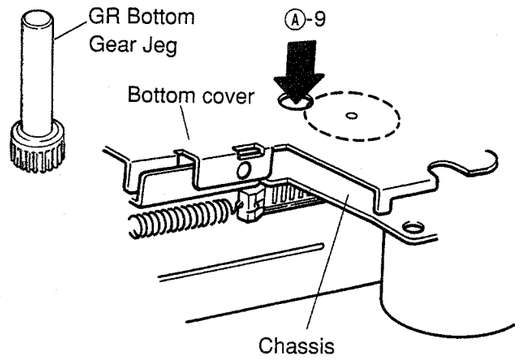


Figure 4

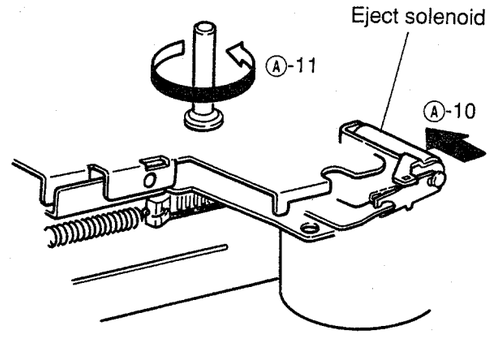


Figure 5

2. Replacement of the bottom cover mounting parts

a. Replacement of the eject gear
(1) Remove M1.2 lock washer ③ as shown in Figure 6.
(2) Pull the eject pinion out of the eject gear and remove the eject gear as shown in Figure 6.
(3) Apply the molykote E paste to the section Ⓑ-1, and mount the eject gear following the removal steps in the reverse order. After replacement is finished, make sure that the gear rotates smoothly. (Refer to Figure 6.)

Note: Do not reuse the used lock washers for remounting.
Take care to avoid damage by piercing and tearing.

b. Replacement of the RF solenoid
(1) Remove two solders ④ and remove the RF solenoid from the bottom cover by pulling it up as shown in Figure 6.
(2) Replace the solenoid with a new one, and remount it following the removal steps in the reverse order as shown in Figure 6.

Note: When removing solder ④, set the temperature of the soldering iron to 350° ± 10° and the soldering time to 1 – 3 seconds. Take care that the solder is not loose, that there is no shortcircuit and that the coating is not damaged.

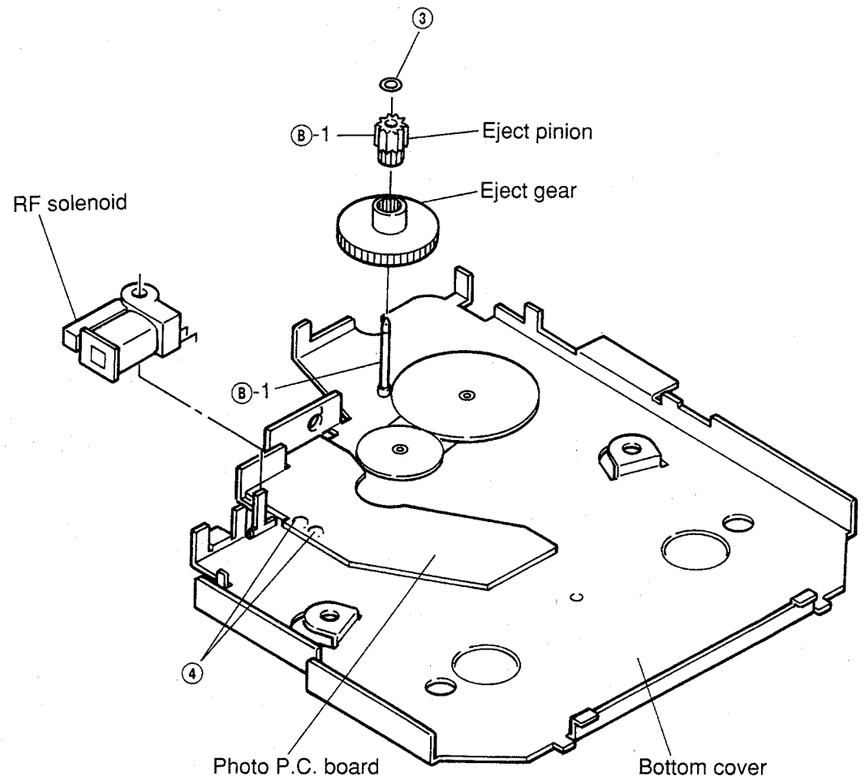


Figure 6

c. Replacement of the photo sensor
(1) Remove four solders ⑤ as shown in Figure 7.
(2) Remove the photo guide together with the photo sensor from the photo P.C. board as shown in Figure 7.
(3) Insert the new photo sensor into the photo guide, and bend the legs of the photo sensor in the direction marked Ⓑ-2 as shown in Figure 7.
(4) Insert the photo guide into the P.C. board and solder the legs so that the photo sensor is set as indicated by ⬚ in Figure 7.

Note: When using the soldering iron, set the temperature of the soldering iron to 350° ± 10° and the soldering time to 1 – 3 seconds. Take care that the solder is not loose, that there is no shortcircuit and that the coating is not damaged. Also take care that the photo guide is properly fixed and straight.

d. Replacement of the detector switch (Automatic metal pack-in)
(1) Remove 4 solders ⑥ with which the switch is fixed as shown in Figure 7.
(2) Prepare the terminals of the switch of the new solder as shown in Figure 8.
(3) After that, insert the switch into the photo P.C. board, and solder the terminals.

Note: When using the soldering iron, refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Also take care that the switch guide is properly fixed and straight.

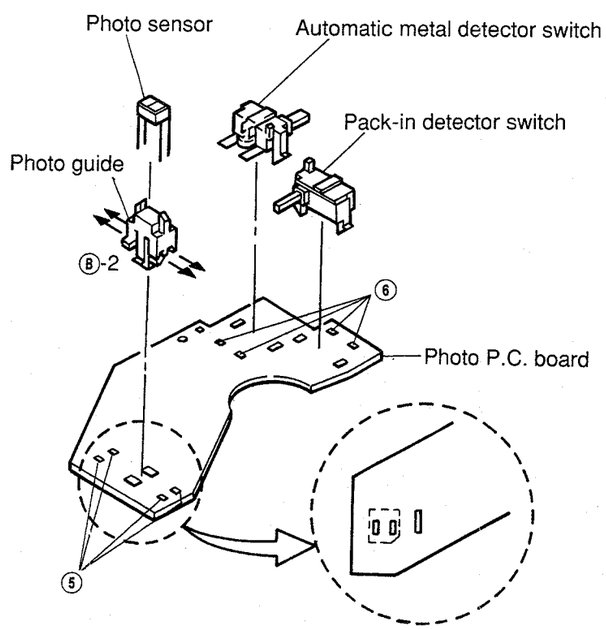


Figure 7

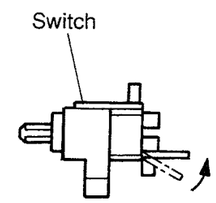


Figure 8

3. Replacement of the mounting parts on the rear of the main chassis

a. Replacement of the belt
(1) After removing the bottom cover, remove the belt.
(2) Clean the new belt with absolute alcohol, and fix it as shown in Figure 9.

Note: When fixing the belt, make sure that it is not twisted or dirty. When removing the belt, do not turn up the front of the chassis.

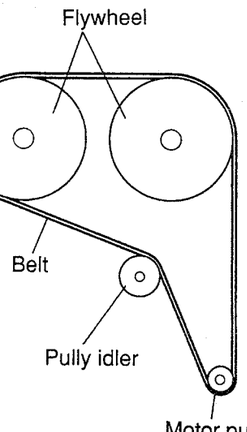


Figure 9

b. Replacement of the motor
(1) After removing the belt, remove spring ⑦ as shown in Figure 10.
(2) Remove solder ⑧-1, and remove the parallel wire (5P) from the control P.C. board as shown in Figure 11.
(3) Remove two screws ⑨ and ⑩, and remove the motor, taking care not to damage the motor idler gear. (Refer to Figure 10.)
(4) Mount the new motor following the removal steps in the reverse order.

Note: Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Since the parallel wire is very easily damaged, handle it with care.
Fasten the two screws with a fastening torque of 3 kg.cm.

*When inserting the clutch spring, be careful of the inserting direction as shown in the Figure.

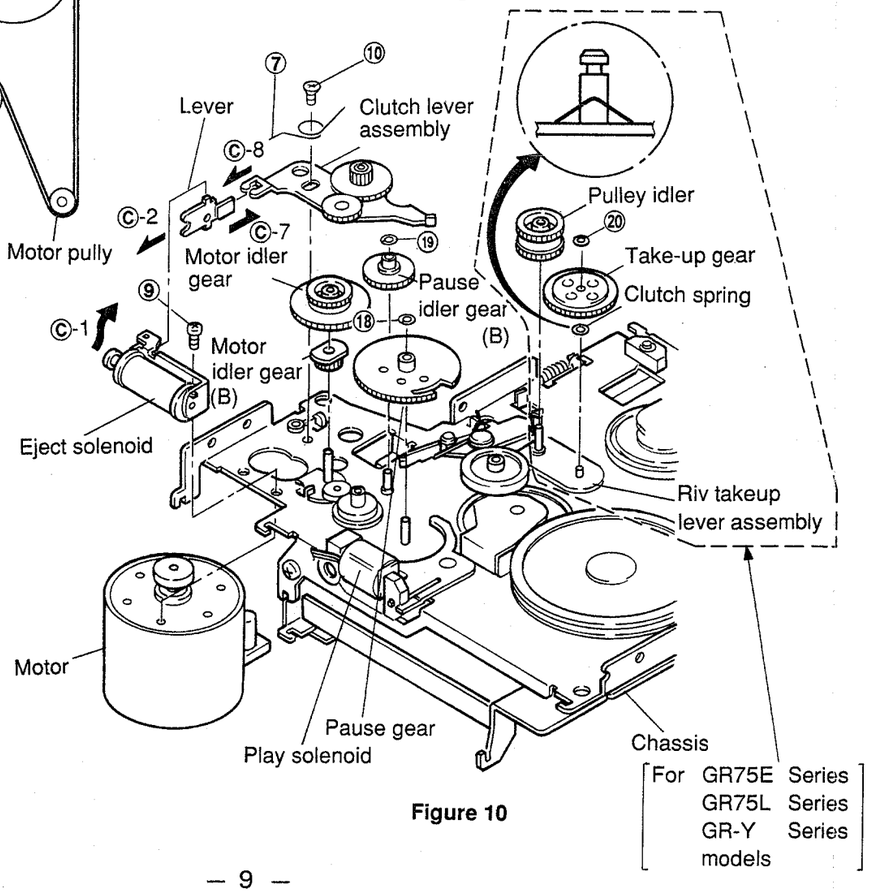


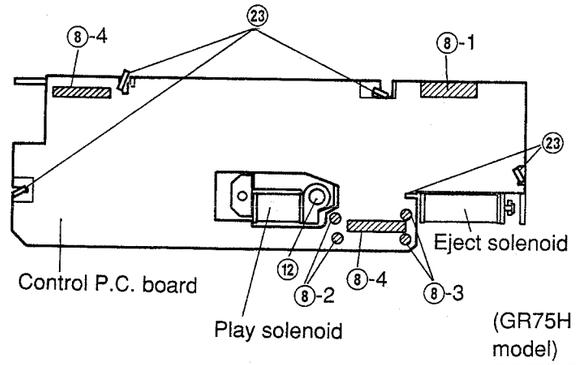
Figure 10

[For GR75E Series
GR75L Series
GR-Y Series
models]

c. Replacement of the flywheels
(1) After removing the belt, pull out the two flywheels. Take care not to loose the polyslider washer ⑪ located between the flywheel and the chassis. (Refer to Figure 12.)
(2) Fix the polyslider washer to the new flywheel and mount the flywheel to the chassis.

d. Replacement of the play solenoid
(1) Remove the two solders ⑧-2 as shown in Figure 11.
(2) Remove one screw ⑫ and remove the solenoid as shown in Figure 11.
(3) Mount the new solenoid following the removal steps in the reverse order.

Note: Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Fasten the screws with a fastening torque of 2.3 kg.cm.



[For GR75E Series model]

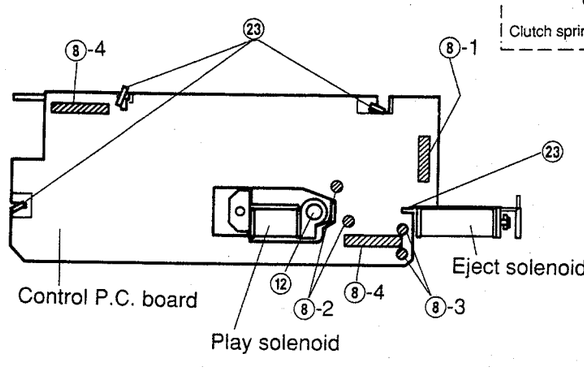


Figure 11

[For GR75L Series
GR-Y Series
GR75H Series models]

e. Replacement of the eject solenoid
(1) Remove two solders ⑧-3. Take care not to loose the tube that protects the wire. (Refer to Figure 11.)
(2) Remove screw ⑨ and remove the solenoid as shown in Figure 10.
(3) Align position Ⓒ-1 of the new solenoid with position Ⓒ-2 of the lever and fasten the screw as shown in Figure 10.
(4) Lead the wire through the tube and solder it.

Note: Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Fasten the screws with a fastening torque of 3 kg.cm. As the solenoid wires are not insulated, do not let them cross each other.

Figure 12

f. Replacement of gears

(f-1) Replacement of the reverse idler gear
(1) Remove M1.2 lock washer ⑬, pull it up from the stud of the chassis and remove the gear as shown in Figure 13.
(2) Remount following the removal steps in the reverse order.

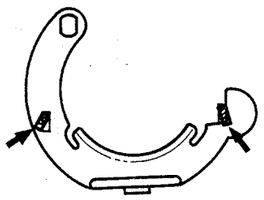
(f-2) Replacement of the sun gear
(1) Remove M1.2 lock washer ⑭ , pull it up from the stud of the chassis and remove the gear as shown in Figure 13.
(2) Mount it, following the removal steps in the reverse order.

(f-3) Replacement of the fixing gear
(1) Adjust the two mounting claws for the fix gear on the chassis ⑮ and remove the section Ⓒ-3 of the gear by pulling it up in the direction of the arrow shown in Figure 13.
(2) Insert the section Ⓒ-4 of the new gear into the chassis, and mount it following the removal steps in the reverse order as shown in Figure 13.

(f-4) Replacement of the reverse lever assembly and planet gear
(1) Remove both the fixing gear and the sun gear and remove the reverse lever assembly as shown in Figure 13.
(2) Remove M1.7 lock washer ⑯ and remove the planet gear as shown in Figure 14.
(3) Mount the new planet gear and reverse lever following the removal steps in the reverse order.

Notes on f-1 through f-4:
After mounting all parts, check if the reverse lever moves in the directions marked Ⓒ-5 when the reverse gear is turned clockwise and counterclockwise.

*After mounting the fixing gear, bend the claws ⑮ into the form of as shown in the Figure.



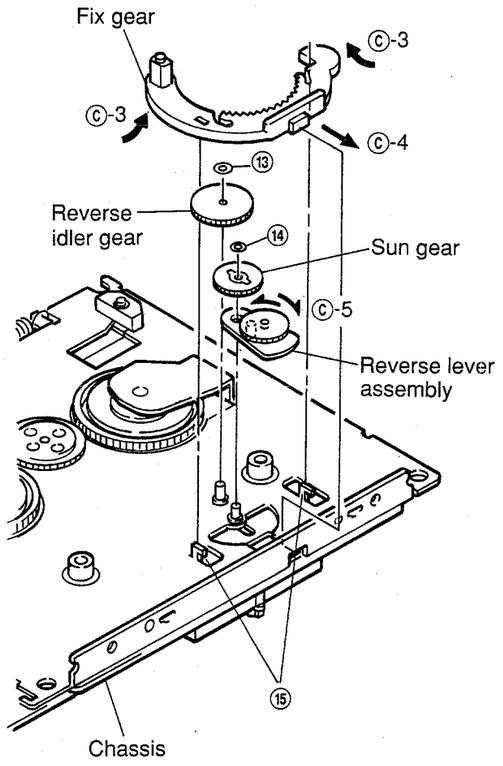
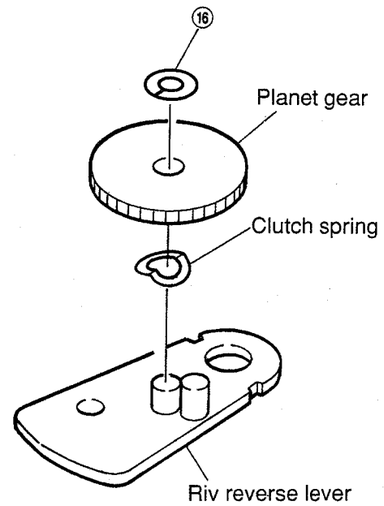


Figure 13

(f-5) Replacement of the clutch lever assembly and eject idler gear
(1) After removing the motor, remove the motor idler gear and the motor idler gear (B) and remove the clutch lever assembly as shown in Figure 10.
(2) Remove M1.2 lock washer ⑰ and remove the eject idler gear as shown in Figure 15.
(3) Mount the new gears and clutch lever following the removal steps in the reverse order.

Note: When mounting the gears to the lever, apply grease (PG-671) to the position Ⓒ-6 as shown in Figure 15. Align the position Ⓒ-7 with the position Ⓒ-8 and mount the clutch lever as shown in Figures 10 and 15.

(f-6) Replacement of the pause gear
(1) Remove M1.2 lock washer ⑱ and remove the pause gear pulling it up from the stud of the chassis as shown in Figure 10.
(2) Mount the new gear following the removal steps in the reverse order.



[Disassembly Reverse Lever Assembly]

Figure 14

(f-7) Replacement of the pause idler gear (B)
(1) After removing the motor and the motor idler gear, remove M1.2 lock washer ⑲ and remove the gear by pulling it up from the stud of the chassis as shown in Figure 10.
(2) Mount the new gear by following the removal steps in the reverse order.

(f-8) Replacement of the take-up gear
(1) After removing the belt and the pulley idler gear, remove M1.2 lock washer ⑳ by pulling it up from the stud of the riv take-up lever assembly as shown in Figure 10.
After removing the Flywheel, remove M1.2 lock washer ㉛ and remove the gear by pulling it up from the stud of the chassis as shown in figure 12. [For GR75H Series model]
(2) Remount the take-up gear following the removal steps in the reverse order.

Notes on f:
Do not reus e the used washers. Take care to avoid damage by piercing and tearing.

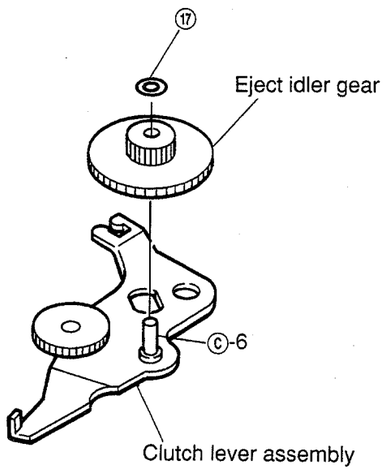


Figure 15

4. Replacement of the parts mounted on the front of the main chassis

a. Replacement of the audio P.C. board
(1) Remove two solders ㉑ and remove the parallel wire (7P) and the head P.C. board as shown in Figure 16.
(2) Adjust the two claws ㉒ to the rectangular holes on the P.C. board and remove the P.C. board as shown in Figure 16.
(3) After replacement, mount the new P.C. board following the removal steps in the reverse order.

Note: The head P.C. board and the parallel wire are easily damaged. Handle them with care. Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Do not bring the soldering iron near the head P.C. board.

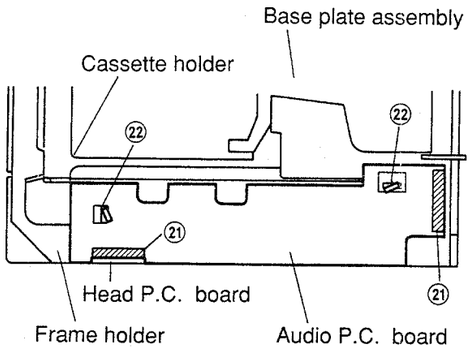


Figure 16

b. Replacement of the control P.C. board
(1) Remove seven solders ⑧ and remove the three parallel wires and the wires of the eject solenoid and of the play solenoid as shown in Figure 11.
(2) Remove five claws ㉓ and remove the P.C. board as shown in Figure 11. [For GR75E Series model] Remove four claws ㉓ and remove the P.C. board as shown in Figure 11. [For GR75L Series, GR-Y Series, GR75H Series models]
(3) After replacing the old P.C. board with a new one, mount it following the removal steps in the reverse order.

Note: As mentioned in Item 4-a, handle the parallel wires carefully, and be sure that the temperature of the soldering iron and the soldering time are proper. As the wires of the eject solenoid are not insulated, do not let them cross each other.

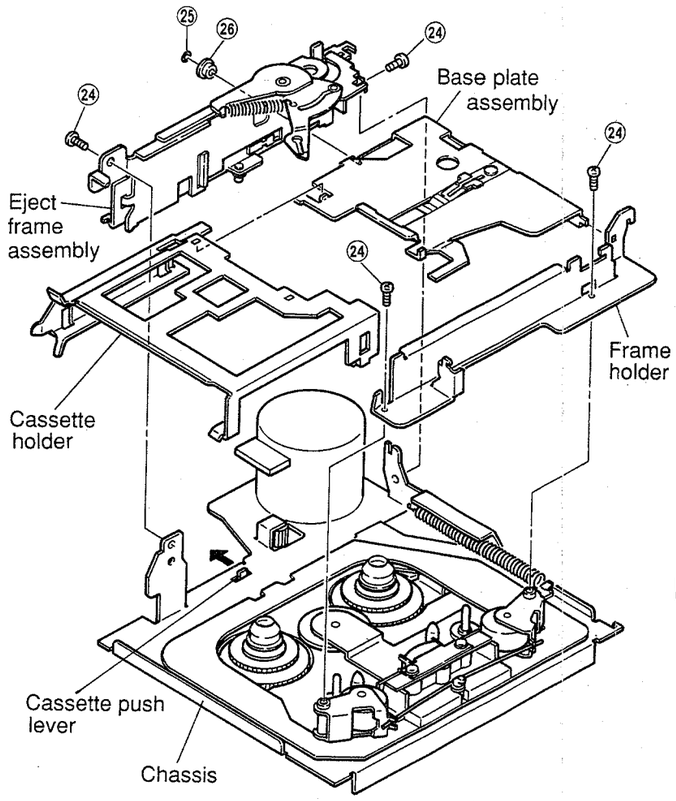


Figure 17

c. Disassembly and assembly of the cassette holder
(1) Remove four screws ㉔ and remove the eject frame assembly and the frame holder as shown in Figure 17.
(2) Remove M1.2 lock washer ㉕ and plate base roller ㉖ and remove the cassette holder and the base plate assembly as shown in Figure 17.
(3) Remount them following the removal steps in the reverse order.

Notes: 1. When mounting the cassette holder and the base plate, insert the slider shaft into the eject arm and fix them turning the slider shaft in the direction indicated by the arrow in the figure. Make sure that the cassette holder and the base plate are in the cassette-in mode during this operation. (Refer to Figure 18).
2. When mounting the eject frame assembly, push the cassette push lever in the direction indicated by the arrow in the Figure 17.
3. When mounting the base plate assembly and the eject frame assembly, or when mounting the eject frame assembly to the chassis, do not apply excessive force to avoid deformations of the eject arm and the frame.
4. Do not reuse the used washers. Take care to avoid damage by piercing and tearing.

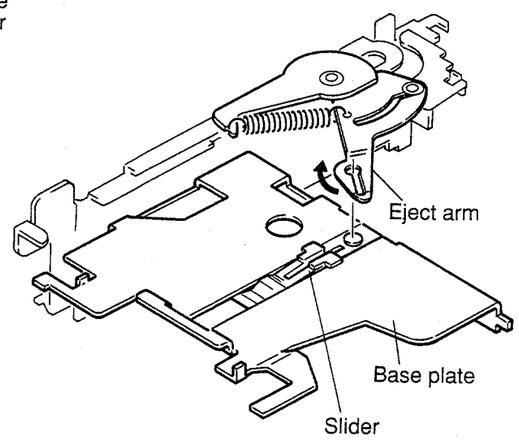


Figure 18

d. Replacement of the reels
(1) Remove M1.7 two lock washers ㉖ (Refer to figure 19).
(2) Move the select lever in the direction marked Ⓓ-1 in the Figure and remove the reel by gripping the reel gear as shown in Figure 19.
(3) After replacement, mount the new reels following the removal steps in the reverse order.
(4) After mounting, check the tape speed and the wow and flutter with test tape MTT-111.

Note: Since the reel is easily loosened if the cap is gripped, always handle it gripping the gear. Do not reuse the used washers. Take care to avoid damage by piercing and tearing.

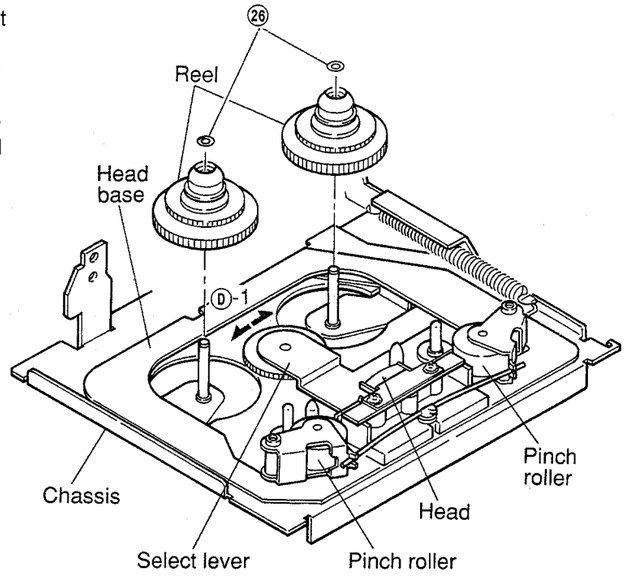


Figure 19

e. Replacement of the pinch rollers
(1) Remove pinch roller spring ㉗ as shown in Figure 20.
(2) Remove M3.1 two lock washers ㉘ and remove the pinch roller as shown in Figure 20.
(3) Mount the pinch rollers following the removal steps in the reverse order.
Apply insulation coating to the position Ⓓ-2 of the pinch roller as shown in Figure 20.

Note: Make sure that the pinch rollers are thoroughly fixed and that they are not deformed. Do not reuse used lock washers. Take care to avoid damage by piercing and tearing.

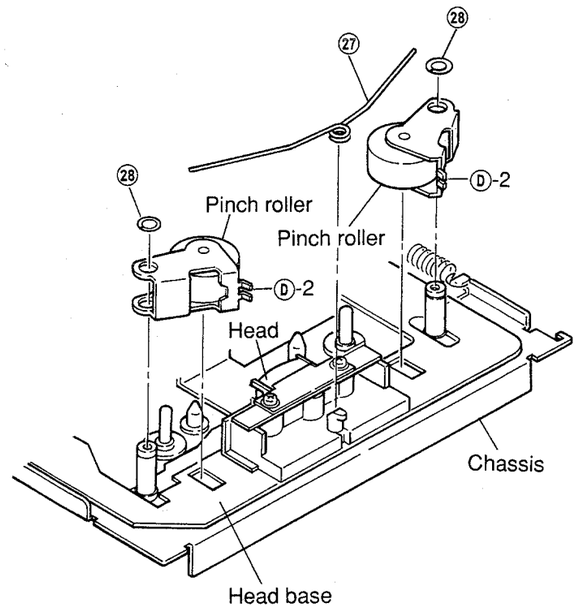


Figure 20

f. Replacement of the head
(1) After removing the pinch roller spring, remove two screws ㉙ as shown in Figure 21.
(2) Remove solder ㉚ and remove the head from the head P.C. board as shown in Figure 22.
(3) After replacement, mount the new head following the removal steps in the reverse order.

Notes: 1. Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Do not bring the soldering iron near the head P.C. board. Make sure that the head P.C. board is not lifted.
2. Fasten the two screws with a fastening torque of 2.3 kg.cm. Note that the tension of the head spring can be decreased if the screws are fastened too strongly.

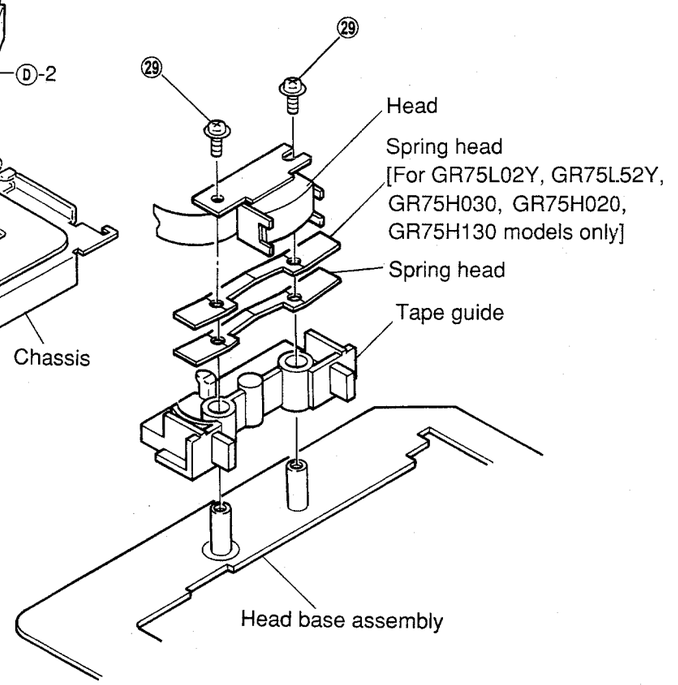


Figure 21

(4) Adjust the height of the head as shown in Figures 23, 24 and 25.
① Place the height adjustment gauge (AI-500) on the head base, and adjust the height so that the check bar fits in the tape head guide smoothly.
② When the check bar touches the top (or bottom) of the tape guide, insert a spacer (t 0.1 mm or polislider washer t 0.13 mm).
If necessary, remove the spacer.

Note: If you do not have a height gauge like described in (4)-①, run the tape at normal speed and adjust the height of the head and the tape head guide so that the tape does not curl.

Figure 22

(5) After having assembled the complete mechanism, adjust the angle of the head with test tape MTT-113C. (Refer to chapter "Adjustment of the head angle".) After the adjustment, apply the screw lock and fix the screws.

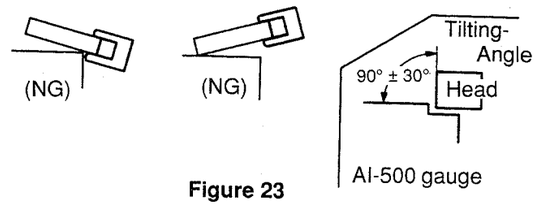


Figure 23

Figure 24

Figure 25

Exploded View (GR75E Series) (1/4)

● For GR75E010/01A/020 Models

● Point of GREASE applid

Ⓐ	MOLYKOTE G PASTE
Ⓑ	GREASE EM-30L
Ⓒ	PG-671

Cassette Deck Assembly Parts List (GR75E Series) (1/4)

Note : The parts without parts list are not supplied.

Symbol No.	IN-dex	Part No.	Description
203	3-C	43A11072W01	Roller, Sub Head
204		04B41345P01	Washer, Lock(M1.2)
206	2-B	41A31756W01	Spring, Head
207	2-B	03S40019G03	Screw, F-Locks(M2x4)
208	2-B	43B12545W01	Tape, Guide
210	4-C	01A10206W01	Assy., Riv Lever R/F Sol
211	2-D	04B41345P29	Washer, Lock(M2.6)
213	2-D	44A10295W01	Gear, Sensor
214	2-D	14A10681W01	Reflector
215	3-E	44A30480W01	Gear, Planet
216	3-E	41A10097W02	Spring, Clutch
217	3-E	04B41345P35	Washer, Lock(M1.7)
218	3-E	01A30824W01	Assy., Riv Lever Reverse
● 219	4-B	07B40283W01	Holder, Cassette
■ 219	4-B	07B40283W01	Holder, Cassette
▲ 219	4-B	07B10074W01	Holder, Cassette
220	5-B	43A12583W01	Roller, Eject
221	5-C	43A63281F01	Roller, Plate Base
222	5-C	44A82206F01	Rack
223	5-C	41B10386W03	Spring, GR(Rack)
224	4-C	43A10121W01	Roller, Eject A
225	4-D	43A10360W01	Roller, Eject B
226		04B41345P11	Washer, Lock(M1.2)
227	4-D	43A12377W01	Roller, Eject C
230	4-A	45B10376W01	Slider
231	4-B	47A63278F01	Shaft, Slider
232	4-A	01A10212W01	Assy.,Riv Plate Base
233	4-C	41B10386W01	Spring, Eject Arm
234	4-B	01A10148W01	Assy., Riv Eject Arm A
235	3-B	01B30863W02	Assy., Pinch Roller
236	4-C	45A10087W01	Lever Pack In SW
237	4-F	44A12975W01	Pinion, Eject
238	4-E	44A13617W01	Gear, Motor Idler(B)
239	3-E	01A10201W02	Assy., Riv Lever Pause
240	2-D	45A40725W01	Lever, Play Sol
241		76T10374W01	Chip
242	1-G	04S40075G05	Washer Polyslider (M2.1)
243	1-G	01A10368W01	Assy., Flywheel
244	3-F	44A10141W01	Gear, Eject Idler
245	3-E	01A10205W02	Assy., Riv Lever Clutch A

Symbol No.	IN-dex	Part No.	Description
246	3-F	44A10145W01	Gear, Eject
247	2-B	01V11500W18	Assy., GR Control P.C. Board
248	3-G	43A41656W01	Spacer, UHMW
249	3-F	44A11063W01	Gear, Bottom A
250	3-F	44A11064W01	Gear, Bottom B
251	3-G	34A11122W02	Washer, GR
252	3-H	01A10210W02	Assy., Riv. Cover Bottom
254	3-G	15B11065W01	Guide, Photo
255	4-G	30T15126W01	Wire, PC Sensor(7P)
258	4-D	45A10101W01	Lever, Eject Sol
259	3-D	49A10131W01	Pulley, Idler
260	4-E	44A10133W01	Gear, Take Up
261	3-E	44A10134W01	Gear, Sun
262	3-E	44B10135W01	Gear, Fix
263	3-E	44B30484W01	Gear, Pause
264	3-F	44A10137W01	Gear, Pause Idler A
265	3-D	44A10379W01	Gear, Pause Idler B
266	3-E	44A10138W01	Gear, Reverse Idler
267	3-E	44A10139W01	Gear, Motor Idler
268	4-E	44A11062W01	Gear, Reel Idler
269	1-G	42A10380W01	Belt, GR
● 270	3-A	01V14700W68	Assy., GR Audio P.C. Board
■ 270	3-A	01V11500W19	Assy., GR Audio P.C. Board
▲ 270	3-A	01V11500W19	Assy., GR Audio P.C. Board
271	3-E	41A30475W01	Spring, Clutch
272		04B41345P15	Washer, Lock(M1.2)
273	4-D	04B41345P02	Washer, Lock(M1.7)
274	3-H	04B41345P17	Washer, Lock(M1)
275	2-D	04B41345P30	Washer, Lock(M3.1)
276		04B41345P32	Washer, Lock(M3.1)
277	4-E	04B41345P37	Washer, Lock(M2.1)
278	2-A	30T15126W02	Wire, PC Joint 7P
279	2-D	03S44205G78	Screw, Pan(M2x6)
280		03S44205G30	Screw, Pan(M2.6x4)
281	4-D	03S72235F53	Screw, Pan(M2x3.3)
282	3-F	03A12132W02	Screw, Eject Clutch (M2x2.3)
283		03S43997P64	Screw, Pan(M1.7x3)
284	3-F	41A10384W01	Spring, Eject Clutch
285	3-E	41A10385W01	Spring, Cas Push
286	2-C	41B10386W02	Spring, Sub Head

Symbol No.	IN-dex	Part No.	Description
287	2-B	41A10387W01	Spring, Pinch Roller
288	3-D	43A12719W01	Roller, Pause
289	3-B	01B30863W01	Assy., Pinch Roller
290	2-B	84T25151W01	Head P.C. Board
291	4-E	01T35403W01	Assy., Reel
292	4-E	04B41345P12	Washer, Lock(M1.7)
293	4-D	01A30161W01	Assy., Riv Lever Take Up
294	3-F	04B41345P34	Washer Lock(M1.2)
296	4-D	41A40910W01	Spring, Clutch
297	4-E	43A41543W01	Washer, Som(M1.2)
298	3-E	47A41458W01	Pin, Take Up
299	4-C	43A40388W01	Spacer, Polyslider
300	2-D	43A41744W01	Lock, Solenoid

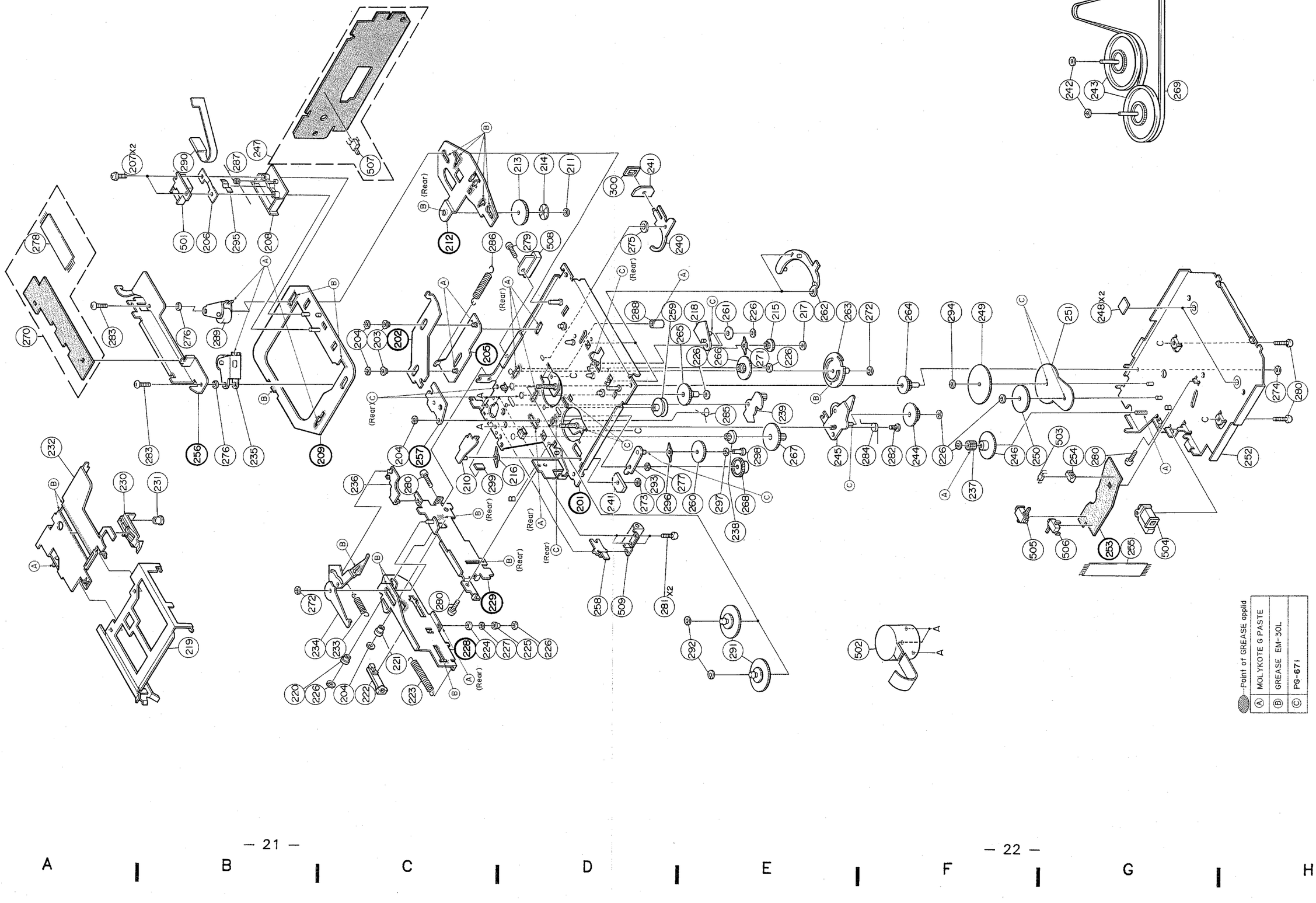
Miscellaneous

●	501	2-B	88T15971W01	Head
■	501	2-B	88T10373W01	Head
▲	501	2-B	88T10373W01	Head
	502	4-E	01V11500W64	Assy., Motor(Main, 13.2V-80mA)
	503	3-G	51T15144W01	Sensor, Photo
	504	4-G	01T10371W01	R/F Sol. Assy.
	505	4-F	40T15382W01	SW., Detector (Pack Down)
	506	4-G	40T15382W01	SW., Detector(Metal)
	507	2-C	40T15222W01	SW., Detector (Pack In)
	508	2-D	01T15249W01	Assy., Play Solenoid
	509	4-D	01T10369W02	Assy., Eject Solenoid

Notes: ● ; For GR75E020 model only ■ ; For GR75E010 model only
▲ ; For GR75E01A model only Others ; Common

Exploded View (GR75L Series) (2/4)

● For GR75L020/02A Models



Cassette Deck Assembly Parts List (GR75E Series) (2/4)

Note : The parts without parts list are not supplied.

Symbol No.	IN-dex	Part No.	Description
203	3-C	43A11072W01	Roll, Sub Head
204		04B41345P01	Washer, Lock(M1.2)
206	2-B	41A31756W01	Spring, Head
207	2-B	03S40019G03	Screw, F-Locks(M2x4)
208	2-B	43B12545W01	Tape, Guide
210	4-C	01A10206W01	Assy., Riv Lever R/F Sol.
211	2-D	04B41345P29	Washer, Lock(M2.6)
213	2-D	44A10295W01	Gear, Sensor
214	2-D	14A10681W01	Reflector
215	3-E	44A30480W01	Gear, Planet
216	3-E	41A10097W02	Spring, Clutch
217	3-E	04B41345P35	Washer, Lock(M1.7)
218	3-E	01A30824W01	Assy., Riv Lever Reverse
219	4-B	07B40283W01	Holder, Cassette
220	5-B	43A12583W01	Roller, Eject
221	5-C	43A63281F01	Roller, Plate Base
222	5-C	44A82208F01	Rack
223	5-C	41B10386W03	Spring, GR(Rack)
224	4-C	43A10121W01	Roller, Eject(A)
225	4-D	43A10360W01	Roller, Eject(B)
226		04B41345P11	Washer, Lock(M1.2)
227	4-D	43A12377W01	Roller, Eject(C)
230	4-A	45B10376W01	Slider
231	4-B	47A63278F01	Shaft, Slider
232	4-A	01A10212W01	Assy., Riv Plate Base
233	4-C	41B10386W01	Spring, Eject Arm
234	4-B	01A21754W01	Assy., Riv Eject Arm(A)
235	3-B	01B30863W02	Assy., Pinch Roller
236	4-C	45A10087W01	Lever, Pack In SW.
237	4-F	44A20314W01	Pinion, Eject
238	4-E	44A13617W01	Gear, Motor Idler(B)
239	3-E	01A10201W02	Assy., Riv Lever Pause
240	2-E	45A40725W01	Lever, Play Sol
241		76T10374W01	Chip
242	1-G	04S40075G05	Washer, Polyslider (M2.1)
243	1-G	01A10368W01	Assy., Flywheel
244	3-F	44A10141W01	Gear, Eject Idler
245	3-E	01A10205W02	Assy., Riv Lever Clutch(A)
246	3-F	44A10145W01	Gear, Eject
247	2-B	01V23700W03	Assy., GR Control P.C. Board
248	3-G	43A41656W01	Spacer, UHMW
249	3-F	44A11063W01	Gear, Bottom(A)
250	3-F	44A11064W01	Gear, Bottom(B)
251	3-G	34A11122W02	Washer, GR
252	3-H	01A10210W02	Assy., Riv, Cover Bottom
254	3-G	15B11065W01	Guide, Photo
255	4-G	30T15126W01	Wire, PC Sensor(7P)
258	4-D	45A10101W01	Lever, Eject Sol.
259	3-D	49A10131W01	Pulley, Idler
260	4-E	44A10133W01	Gear, Take Up
261	3-E	44A10134W01	Gear, Sun
262	3-E	44B10135W01	Gear, Fix
263	3-E	44B21670W01	Gear, Pause
264	3-F	44A10137W01	Gear, Pause Idler(A)
265	3-D	44A10379W01	Gear, Pause Idler(B)
266	3-E	44A10138W01	Gear, Reverse Idler
267	3-E	44A10139W01	Gear, Motor Idler
268	4-E	44A11062W01	Gear, Reel Idler
269	1-G	42A10380W01	Belt, GR
270	3-A	01V14700W68	Assy., GR Audio P.C. Board
271	3-E	41A30475W01	Spring, Clutch
272	3-F	04B41345P15	Washer, Lock(M1.2)
273	4-D	04B41345P02	Washer, Lock(M1.7)
274	3-H	04B41345P17	Washer, Lock(M1)
275	2-D	04B41345P30	Washer, Lock(M3.1)
276		04B41345P32	Washer, Lock(M3.1)
277	4-E	04B41345P37	Washer, Lock(M2.1)
278	2-A	30T15126W02	Wire, PC Joint 7P
279	2-D	03S44205G78	Screw, Pan(M2x6)
280		03S44205G30	Screw, Pan(M2.6x4)
281	4-D	03S72235F53	Screw, Pan(M2x3.3)
282	3-F	03A12132W02	Screw, Eject Clutch (M2x2.3)
283		03S43997P64	Screw, Pan(M1.7x3)
284	3-F	41A10384W01	Spring, Eject Clutch
285	3-E	41A10385W01	Spring, Cas. Push
286	2-C	41B10386W02	Spring, Sub Head
287	2-B	41A10387W01	Spring, Pinch Roller
288	3-D	43A12719W01	Roller, Pause
289	3-B	01B30863W01	Assy., Pinch Roller
290	2-B	84T25151W01	Head P.C. Board
291	4-E	01T35403W02	Assy., Reel
292	4-E	04B41345P12	Washer, Lock(M1.7)
293	4-D	01A30161W01	Assy., Riv Lever Take Up
294	3-F	04B41345P34	Washer, Lock(M1.2)
295	2-B	26A20537W01	Shield, Plate
296	4-D	41A40910W01	Spring, Clutch
297	4-E	43A41543W01	Washer, Som(M1.2)
298	3-E	47A41458W01	Pin, Take Up
299	3-D	43A40388W01	Spacer, Polyslider
300	2-D	43A41744W01	Lock, Solenoid

Miscellaneous

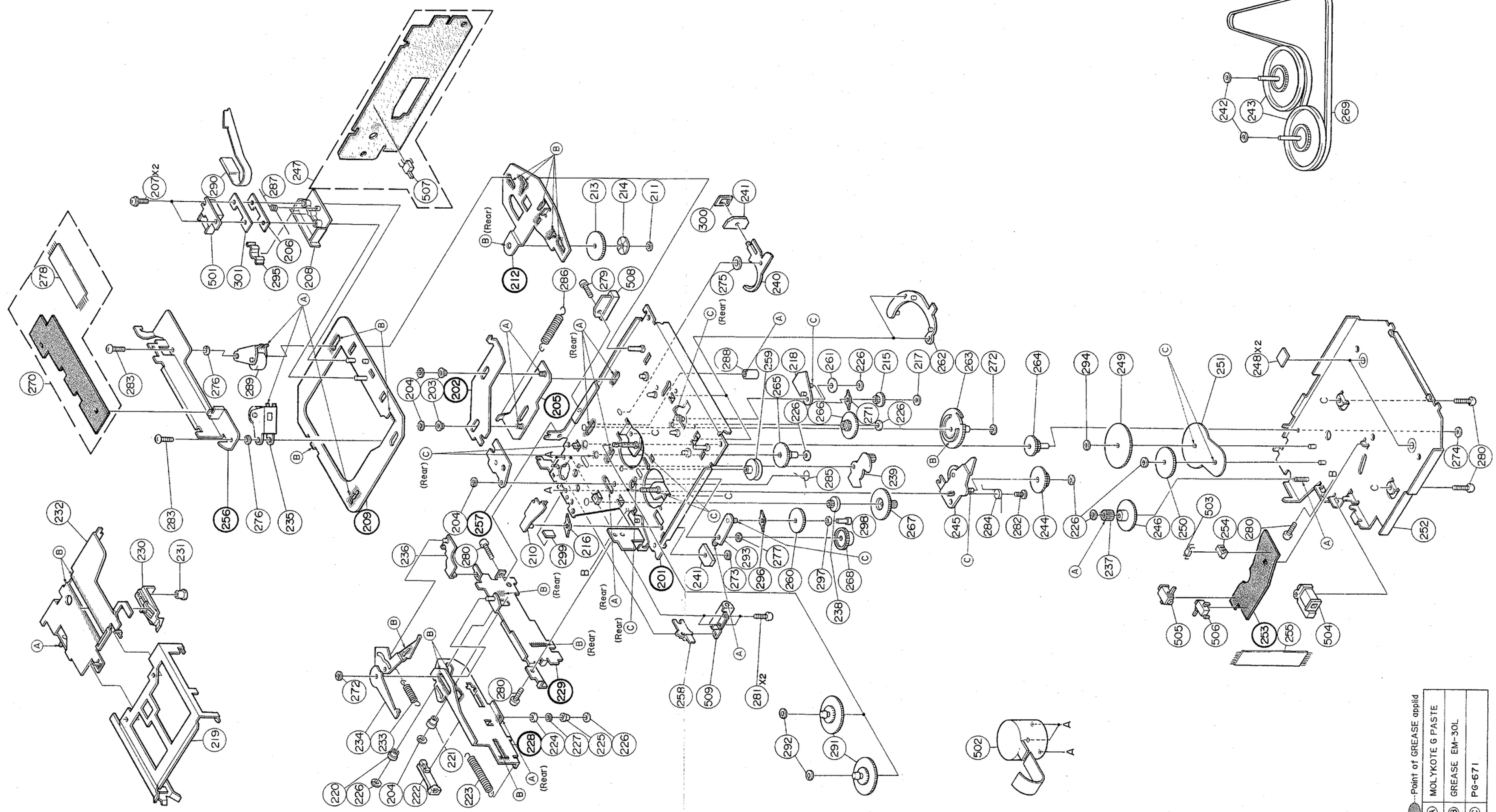
	501	2-B	88T15971W01	Head
◆	502	4-E	01V23900W60	Assy., Motor(13.2V-105mA)
○	502	4-E	01V43400W37	Assy., Motor(13.2V-88mA)
	503	3-G	51T15144W01	Sensor, Photo
	504	4-G	01T10371W01	R/F Sol. Assy
	505	4-F	40T15382W01	SW., Detector (Pack Down)
	506	4-G	40T15382W01	SW., Detector (Metal)
	507	2-C	40T15222W01	SW., Detector (Pack In)
	508	2-D	01T15249W01	Assy., Play Solenoid
	509	4-D	01T10369W02	Assy., Eject Solenoid

Notes : ◆ ; For GR75L020 model only ○ ; For GR75L02A model only
Others ; Common

Notes : ◆ ; For GR75L020 model only ○ ; For GR75L02A model only
Others ; Common

Exploded View (GR-Y Series) (3/4)

● For GR75L02Y/52Y Model



Cassette Deck Assembly Parts List (GR-Y Series) (3/4)

Note : The parts without parts list are not supplied.

Symbol No.	IN-dex	Part No.	Description
203	3-C	43A11072W01	Roll, Sub Head
204		04B41345P01	Washer, Lock(M1.2)
206	2-B	41A31756W01	Spring, Head
207	2-B	03S40019G03	Screw, F-Locks(M2x4)
208	2-B	43B12545W01	Tape, Guide
210	4-C	01A10206W01	Assy., Riv Lever R/F Sol.
211	2-D	04B41345P29	Washer, Lock(M2.6)
213	2-D	44A10295W01	Gear, Sensor
214	2-D	14A10681W01	Reflector
215	3-E	44A30480W01	Gear, Planet
216		41A10097W02	Spring, Clutch
217	3-E	04B41345P35	Washer, Lock(M1.7)
218	3-E	01A30824W01	Assy., Riv Lever Reverse
219	4-B	07B40283W01	Holder, Cassette
220	5-B	43A12583W01	Roller, Eject
221	5-C	43A63281F01	Roller, Plate Base
222	5-C	44A82206F01	Rack
223	5-C	41B10386W03	Spring, GR(Rack)
224	4-C	43A10121W01	Roller, Eject(A)
225	4-D	43A10360W01	Roller, Eject(B)
226		04B41345P11	Washer, Lock(M1.2)
227	4-D	43A12377W01	Roller, Eject(C)
230	4-A	45B10376W01	Slider
231	4-B	47A63278F01	Shaft, Slider
232	4-A	01A10212W01	Assy., Riv Plate Base
233	4-C	41B10386W01	Spring, Eject Arm
234	4-B	01A21754W01	Assy., Riv Eject Arm(A)
235	3-B	01B30863W02	Assy., Pinch Roller
236	4-C	45A10087W01	Lever, Pack In SW.
237	4-F	44A20314W01	Pinion, Eject
238	4-E	44A13617W01	Gear, Motor Idler(B)
239	3-E	01A10201W02	Assy., Riv Lever Pause
240	2-D	45A40725W01	Lever, Play Sol.
241		76T10374W01	Chip
242	1-G	04S40075G05	Washer, Polyslider (M2.1)
243	1-G	01A10368W01	Assy., Flywheel
244	3-F	44A10141W01	Gear, Eject Idler
245	3-E	01A10205W02	Assy., Riv Lever Clutch(A)
246	3-F	44A10145W01	Gear, Eject
☆ 247	2-B	01V23700W03	Assy., GR Control P.C. Board
◇ 247		01V44200W74	Assy., GR Control P.C. Board
248	3-G	43A41656W01	Spacer, UHMW
249	3-F	44A11063W01	Gear, Bottom(A)
250	3-F	44A11064W01	Gear, Bottom(B)
251	3-G	34A11122W02	Washer, GR
252	3-H	01A10210W02	Assy., Riv. Cover Bottom
254	3-G	15B11065W01	Guide, Photo
255	4-C	30T15126W01	Wire, PC Sensor(7P)
258	4-D	45A10101W01	Lever, Eject Sol.
259	3-D	49A10131W01	Pulley, Idler
260	4-E	44A10133W01	Gear, Take Up
261	3-E	44A10134W01	Gear, Sun
262	3-E	44B10135W01	Gear, Fix
263	3-E	44B21670W01	Gear, Pause
264	3-F	44A10137W01	Gear, Pause Idler(A)
265	3-D	44A10379W01	Gear, Pause Idler(B)
266	3-E	44A10138W01	Gear, Reverse Idler
267	3-E	44A10139W01	Gear, Motor Idler
268	4-E	44A11062W01	Gear, Reel Idler
269	1-G	42A10380W01	Belt, GR
270	3-A	01V33300W03	Assy., GR Audio P.C. Board
271	3-E	41A30475W01	Spring, Clutch
272	3-F	04B41345P15	Washer, Lock(M1.2)
273		04B41345P02	Washer, Lock(M1.7)
274	3-H	04B41345P17	Washer, Lock(M1)
275	2-D	04B41345P30	Washer, Lock(M3.1)
276	3-B	04B41345P32	Washer, Lock(M3.1)
277	4-E	04B41345P37	Washer, Lock(M2.1)
278	2-A	30T15126W02	Wire, PC Joint 7P
279	2-D	03S44205G78	Screw, Pan(M2x6)
280		03S44205G30	Screw, Pan(M2.6x4)
281	4-D	03S72235F53	Screw, Pan(M2x3.3)
282	3-F	03A12132W02	Screw, Eject Clutch (M2x2.3)
283		03S43997P64	Screw, Pan(M1.7x3)
284	3-F	41A10384W01	Spring, Eject Clutch
285	3-E	41A10385W01	Spring, Cas. Push
286	2-C	41B10386W02	Spring, Sub Head
287	2-B	41A10387W01	Spring, Pinch Roller
288	3-D	43A12719W01	Roller, Pause
289	3-B	01B30863W01	Assy., Pinch Roller
290	2-B	84T35271W01	Head P.C. Board

Notes: ☆ ; For GR75L02Y model only ◇ ; For GR75L52Y model only
Others ; Common

Symbol No.	IN-dex	Part No.	Description
291	4-E	01T35403W02	Assy., Reel
292	4-E	04B41345P12	Washer, Lock(M1.7)
293	4-D	01A30161W01	Assy., Riv Lever Take Up
294	3-F	04B41345P34	Washer, Lock(M1.2)
295	2-B	26A20537W01	Shield, Plate
296	4-D	41A40910W01	Spring, Clutch
297	4-E	43A41543W01	Washer, Som(M1.2)
298	3-E	47A41458W01	Pin, Take Up
299	3-C	43A40388W01	Spacer, Polyslider
300	2-D	43A41744W01	Lock, Solenoid
301	2-B	41A41416W01	Spring, Head

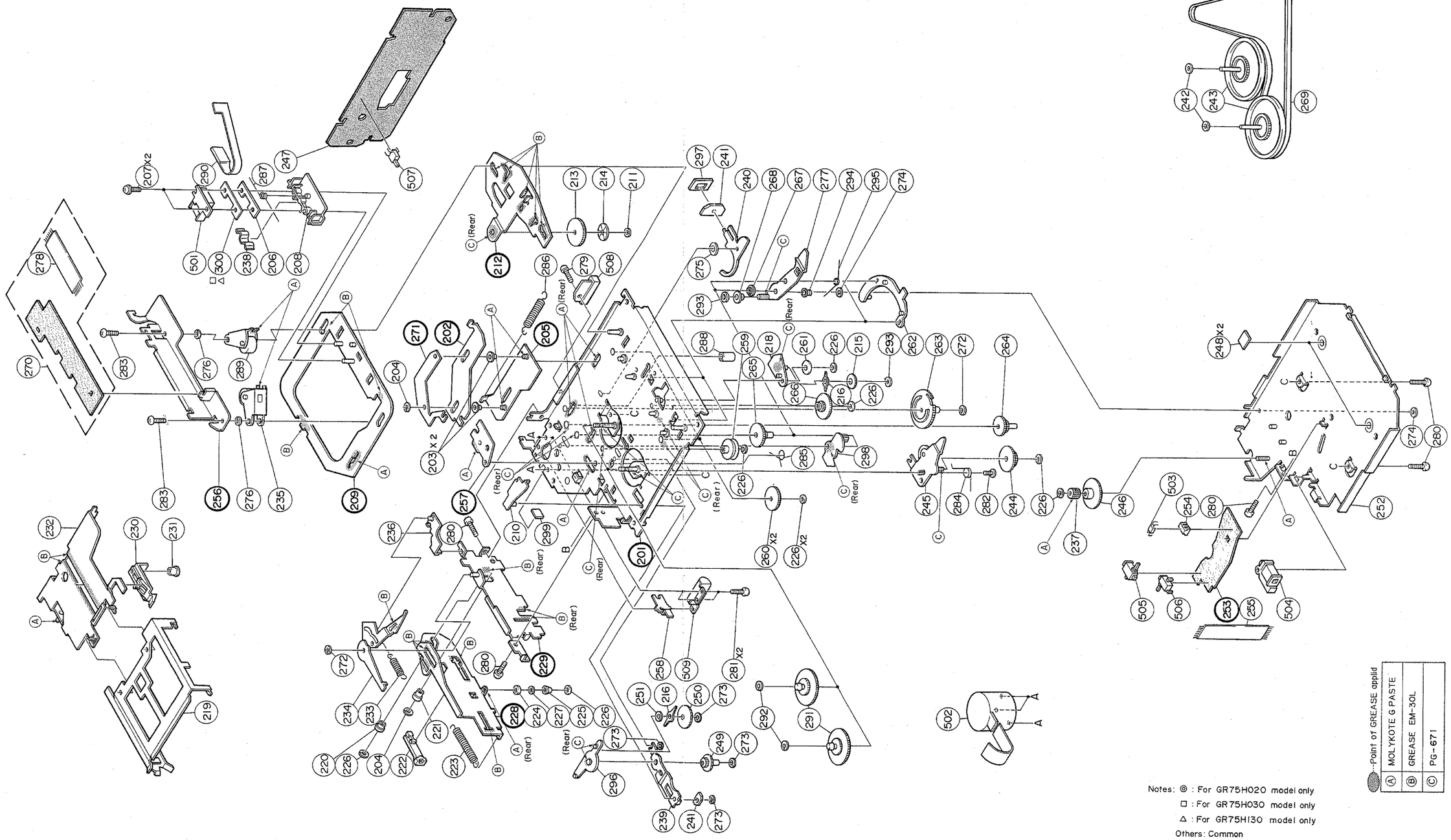
Miscellaneous

501	2-B	88T15971W01	Head
☆ 502	4-E	01V23900W60	Assy., Motor(13.2V-105mA)
◇ 502	4-E	01V44200W73	Assy., Motor(13.2V-80mA)
503	3-G	51T15144W01	Sensor, Photo
504	4-G	01T10371W01	R/F Sol. Assy
505	4-F	40T15382W01	SW., Detector (Pack Down)
506	4-G	40T15382W01	SW., Detector (Metal)
507	2-C	40T15222W01	SW., Detector (Pack In)
508	2-D	01T15249W01	Assy., Play Solenoid
509	4-D	01T10369W02	Assy., Eject Solenoid

Notes: ☆ ; For GR75L02Y model only ◇ ; For GR75L52Y model only
Others ; Common

Exploded View (GR75H Series) (4/4)

● For GR75H030/020/130 Model


Notes: ◎ : For GR75H020 model only
□ : For GR75H030 model only
△ : For GR75H130 model only
Others: Common
Point of GREASE applid
Ⓐ MOLYKOTE G PASTE
Ⓑ GREASE EM-30L
Ⓒ PG-671

Cassette Deck Assembly Parts List (GR75H Series) (4/4)

Note : The parts without parts list are not supplied.

Symbol No.		IN-dex	Part No.	Description
	203	3-C	43A31453W01	Roller, Sub Head
	204		04B41345P01	Washer, Lock(M1.2)
	206	2-B	41A31756W01	Spring, Head
	207	2-A	03A38021W01	Screw, Flange(M2x4)
	208	2-B	43B12545W01	Tape, Guide
	210	4-C	01A30462W01	Assy., Riv Lever R/F Sol
	211	2-D	04B41345P29	Washer, Lock(M2.6)
	213	2-D	44A10295W01	Gear, Sensor
	214	2-D	14A10681W01	Reflector
	215	3-E	44A30480W01	Gear, Planet
	216		41A30475W01	Spring, Clutch
	218	3-E	01A30824W01	Assy., Riv Lever Reverse
◎	219	4-B	07B40283W01	Holder, Cassette
□	219	4-B	07B40283W01	Holder, Cassette
△	219	4-B	07B40012W01	Holder, Cassette
	220	5-B	43A12583W01	Roller, Eject
	221	5-C	43A63281F01	Roller, Plate Base
	222	5-C	44A82206F01	Rack
◎	223	5-C	41B10386W03	Spring, GR(Rack)
□	223	5-C	41B10386W03	Spring, GR(Rack)
△	223	5-C	41B10386W04	Spring, GR(Rack)
	224	5-C	43A10121W01	Roller, Eject A
	225	5-D	43A10360W01	Roller, Eject B
	226		04B41345P11	Washer, Lock(M1.2)
	227	5-D	43A12377W01	Roller, Eject C
	230	4-A	45B10376W01	Slider
	231	4-B	47A63278F01	Shaft, Slider
◎	232	4-A	01A10212W01	Assy., Riv Plate Base
□	232	4-A	01A10212W01	Assy., Riv Plate Base
△	232	4-A	01A40024W01	Assy., Riv Plate Base
◎	233	5-C	41B10386W01	Spring, Eject Arm
□	233	5-C	41B10386W01	Spring, Eject Arm
△	233	5-C	41B63283F11	Spring
◎	234	5-C	01A30883W01	Assy., Riv Eject Arm B
□	234	5-C	01A30883W01	Assy., Riv Eject Arm B
△	234	5-C	01A40021W01	Assy., Riv Eject Arm D
	235	3-B	01B30863W02	Assy., Pinch Roller
	236	4-C	45A10087W01	Lever Pack In SW
	237	4-F	44A20314W01	Pinion, Eject
	238	2-B	26A20537W01	Shield, plate
	239	5-D	01A40881W01	Assy., Riv RF Link
	240	2-D	45A40725W01	Lever, Play Sol.
	241		76T10374W01	Chip
	242	1-G	04S40075G05	Washer, Polyslider(M2.1)
	243	1-G	01A30488W01	Assy., Flywheel
	244	3-F	44A10141W01	Gear, Eject Idler
	245	3-E	01A10205W02	Assy., Riv Lever Clutch A
	246	3-F	44A10145W01	Gear, Eject
	247	2-B	01V33500W45	Assy., GR Control P.C. Board
	248	3-G	43A41656W01	Spacer, UHMW
	249	5-D	44A30481W01	Gear, RF Idler
	250	4-D	44A30483W01	Gear, RF
	251	4-D	04S40075G58	Washer, Polyslider(M2.1)
	252	3-H	01A30463W01	Assy., Riv. Cover Bottom
	254	3-G	15B11065W01	Guide, Photo
	255	4-G	30T15126W01	Wire, PC Sensor(7P)
	258	4-D	45A10101W01	Lever, Eject Sol
	259	3-D	49A30476W01	Pulley, Idler
	260	4-E	44A30482W01	Gear, Take Up
	261	3-E	44A30478W01	Gear, Sun
	262	3-E	44B10135W01	Gear, Fix
	263	3-E	44B30484W01	Gear, Pause
	264	3-F	44A10137W01	Gear, Pause Idler A
	265	3-E	44A30486W01	Gear, Pause Idler B
	266	3-E	44A30479W01	Gear, Reverse Idler
	267	2-E	44A30485W01	Gear, Motor Idler
	268	2-E	44A30487W01	Gear, Motor Clutch
	269	1-G	42A31850W01	Belt, GR
◎	270	3-A	01V43400W38	Assy., GR Audio P.C. Board
□	270	3-A	01V33300W03	Assy., GR Audio P.C. Board
△	270	3-A	01V33300W03	Assy., GR Audio P.C. Board
	272	3-F	04B41345P15	Washer, Lock(M1.2)
	273		04B41345P02	Washer, Lock(M1.7)
	274	3-H	04B41345P17	Washer, Lock(M1)
	275	2-D	04B41345P30	Washer, Lock(M3.1)
	276	3-B	04B41345P32	Washer, Lock(M3.1)
	277	2-E	01A30464W01	Assy., Riv Play Clutch
	278	2-A	30T15126W02	Wire, PC Joint 7P
	279	2-D	03S44205G78	Screw, Pan(M2x6)
	280		03S44205G30	Screw, Pan(M2.6x4)
	281	4-D	03S72235F53	Screw, Pan(M2x3.3)
	282	3-F	03A12132W02	Screw, Eject Clutch(M2x2.3)
	283		03S43997P64	Screw, Pan(M1.7x3)
	284	3-F	41A10384W01	Spring, Eject Clutch
	285	3-E	41A10385W01	Spring, Cas Push
	286	2-C	41B10386W02	Spring, Sub Head
	287	2-B	41A10387W01	Spring, Pinch Roller
	288	3-D	43A12719W01	Roller, Pause
	289	3-B	01B30863W01	Assy., Pinch Roller
◎	290	2-B	84T25151W01	Head P.C. Board

Notes: ◎ ; For GR75H020 model only □ ; For GR75H030 model only
△ ; For GR75H130 model only Others ; Common

Symbol No.		IN-dex	Part No.	Description
□	290	2-B	84T35271W01	Head P.C. Board
△	290	2-B	84T35271W01	Head P.C. Board
	291	5-E	01T35403W01	Assy., Reel
	292	5-E	04B41345P12	Washer, Lock(M1.7)
	293	2-D	04B41345P35	Washer, Lock(M1.7)
	294	2-E	43A30827W01	Spacer, Motor Idler
	295	2-E	41A30490W01	Spring, Play Clutch
	296	5-D	01A40882W01	Assy., Riv Lever RF
	297	2-D	34A48030W01	Washer, Solenoid
	298	3-E	01A10201W02	Assy, Riv Lever Pause
	299	4-C	43A40388W01	Spacer, Polyslider
□	300	2-B	41A41416W01	Spring, Head
△	300	2-B	41A41416W01	Spring, Head

Miscellaneous

◎	501	2-B	88T15971W01	Head
□	501	2-B	88T35406W01	Head
△	501	2-B	88T35406W01	Head
	502	5-F	01V41100W72	Assy., Motor(11.5v-85mA)
	503	3-G	51T15144W01	Sensor, Photo
	504	4-G	01T10371W01	R/F Sol. Assy.
	505	4-F	40T15382W01	SW., Detector (Pack Down)
	506	4-G	40T15382W01	SW., Detector(Metal)
	507	2-C	40T15222W01	SW., Detector (Pack In)
	508	2-D	01T15249W01	Assy., Play Solenoid
	509	4-D	01T10369W02	Assy., Eject Solenoid

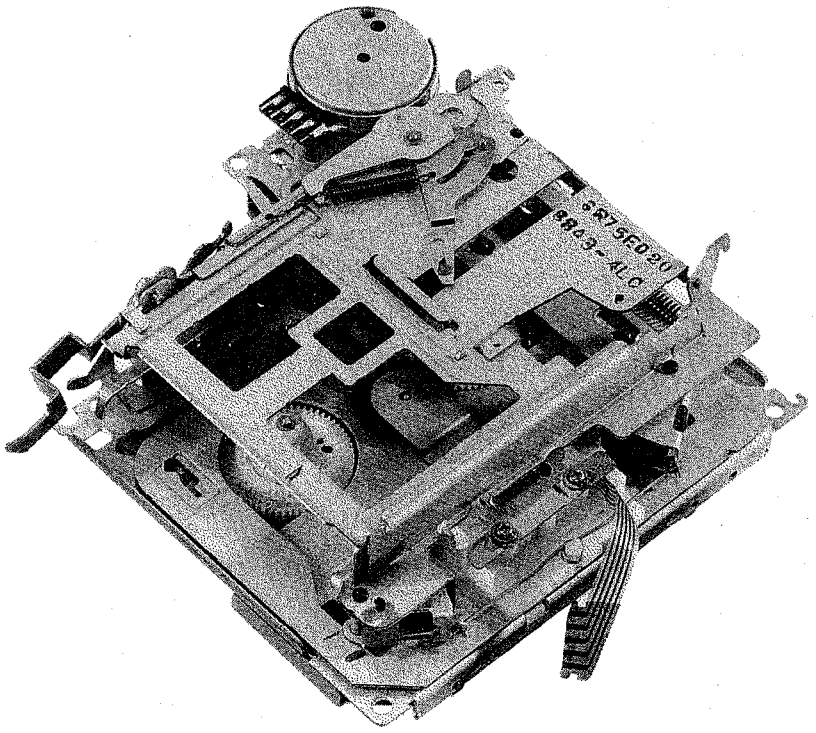
Notes: ◎ ; For GR75H020 model only □ ; For GR75H030 model only
△ ; For GR75H130 model only Others ; Common

TM 206

ALPINE SERVICE MANUAL

Cassette Deck Mechanism

ADDENDUM & REVISED (III)



GR/GR-Y SERIES

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(14) Insert the jig into the hole Ⓐ-9 as shown in Figure and rotate the eject solenoid counterclockwise about 20 times, pulling it in the direction Ⓐ-10 with the finger.
Then the eject operation is completed.
Instead of operation (14), the eject operation can be performed by mounting the mechanism to the product. (Refer to Figures 4 and 5.)

Note: Do not reuse the used lock washers for mounting.
When turning the mechanism, be careful not to drop the gear and the flywheel.
Fasten the three screws with a fastening torque of 6 kg.cm.

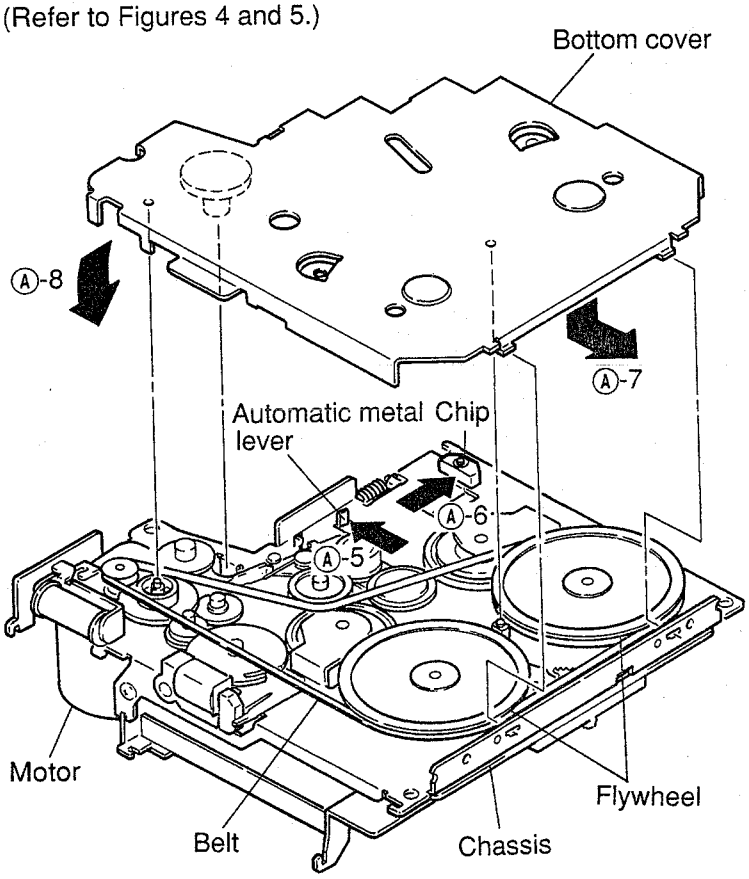


Figure 3

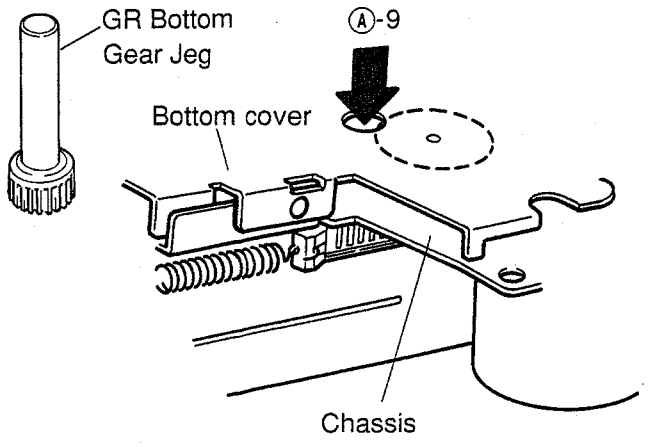


Figure 4

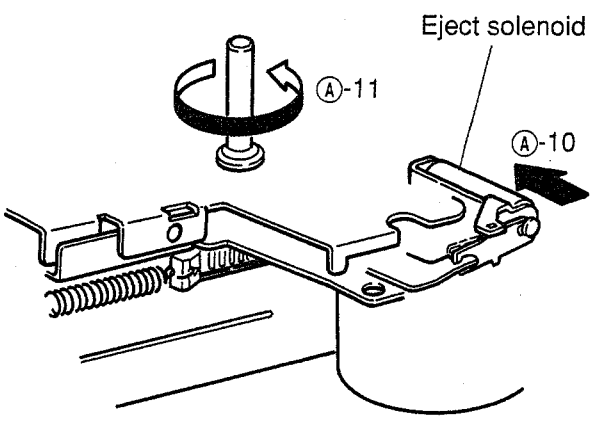


Figure 5

Disassembly, Assembly and Replacement of Functional Parts

1. Disassembly and Assembly of Bottom Cover

(1) Turn the mechanism around as shown in Figure 1.
(2) Remove M1 lock washer ① as shown in Figure 1.
(3) Remove three screws ② as shown in Figure 1.
(4) Lift the bottom cover slowly from the position Ⓐ-1, pull the hooks out of the holes in the chassis, and remove the bottom cover as shown in Figure 1.
(5) When remounting the bottom cover, first turn the front of the mechanism up as shown in Figure 2.
(6) Slide the slider in the direction Ⓐ-2 as shown in Figure 2.
(7) Push down the cassette holder in the direction Ⓐ-3 as shown in Figure 2.
(8) Pull the door pin in the direction Ⓐ-4 so that the mechanism is locked in as shown in Figure 2.
(9) Turn the mechanism around as shown in Figure 3.
(10) Pull the automatic metal lever in the direction Ⓐ-5 and the RF solenoid chip in the direction Ⓐ-6 as shown in Figure 3.
(11) Insert the hooks of the bottom cover into the chassis in the direction Ⓐ-7, and then join the part Ⓐ-8 of the bottom cover to the chassis slowly, making sure that the 3 points indicated with the straight lines in the Figure 3 are fitted properly.
If there are troubles in mounting the bottom cover, do not apply force but remove the bottom cover once again and check the positions of the individual parts. (Refer to Figure 3.)
(12) Since the hooks marked Ⓐ-8 will be lifted slightly as shown in Figure 4, insert the jig through the hole Ⓐ-9, and fix it turning the jig slightly in the direction Ⓐ-11.
Instead of operation (12), turn the gear nose slowly with a precision screwdriver etc., taking care not to damage it.
After 2 to 3 turns, it will click into place.
(Refer to Figures 4 and 5.)
(13) Fix the screws and the lock washer that have been removed.

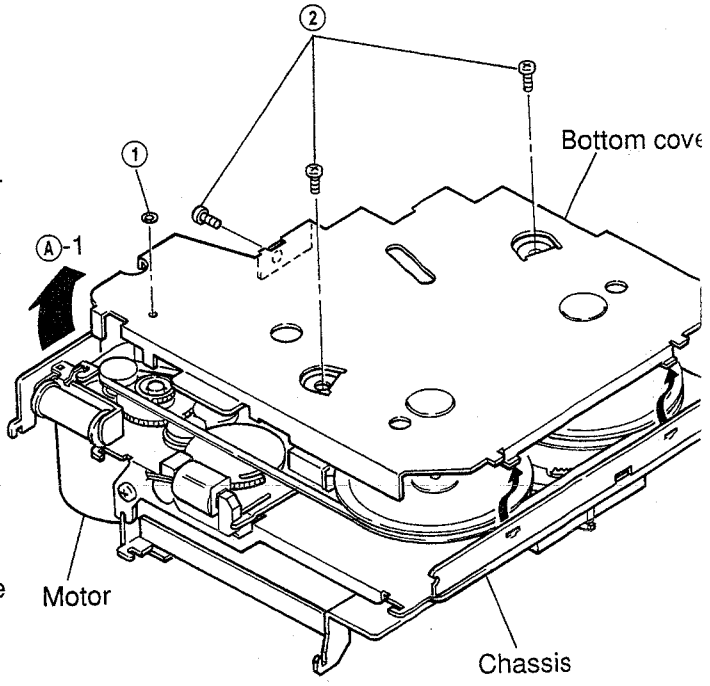


Figure 1

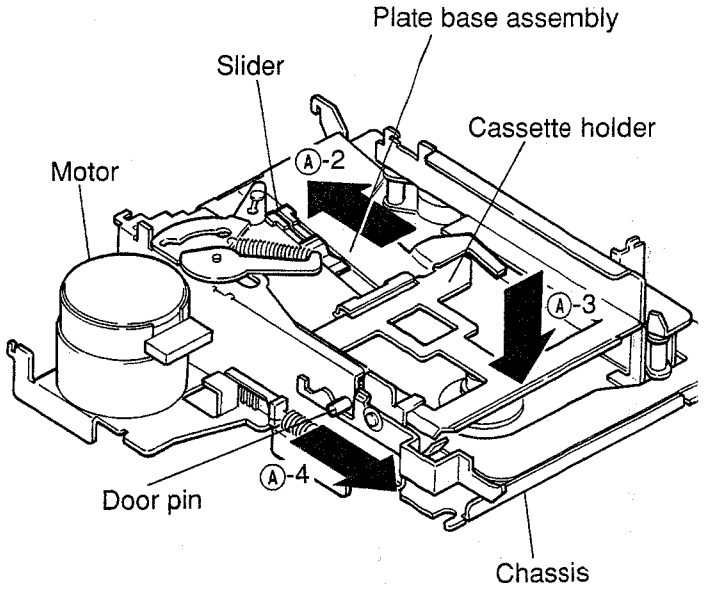


Figure 2

2. Replacement of the bottom cover mounting parts

a. Replacement of the eject gear
(1) Remove M1.2 lock washer ③ as shown in Figure 6.
(2) Pull the eject pinion out of the eject gear and remove the eject gear as shown in Figure 6.
(3) Apply the molykote E paste to the section Ⓑ-1, and mount the eject gear following the removal steps in the reverse order. After replacement is finished, make sure that the gear rotates smoothly. (Refer to Figure 6.)

Note: Do not reuse the used lock washers for remounting.
Take care to avoid damage by piercing and tearing.

b. Replacement of the RF solenoid
(1) Remove two solders ④ and remove the RF solenoid from the bottom cover by pulling it up as shown in Figure 6.
(2) Replace the solenoid with a new one, and remount it following the removal steps in the reverse order as shown in Figure 6.

Note: When removing solder ④, set the temperature of the soldering iron to 350° ± 10° and the soldering time to 1 – 3 seconds. Take care that the solder is not loose, that there is no shortcircuit and that the coating is not damaged.

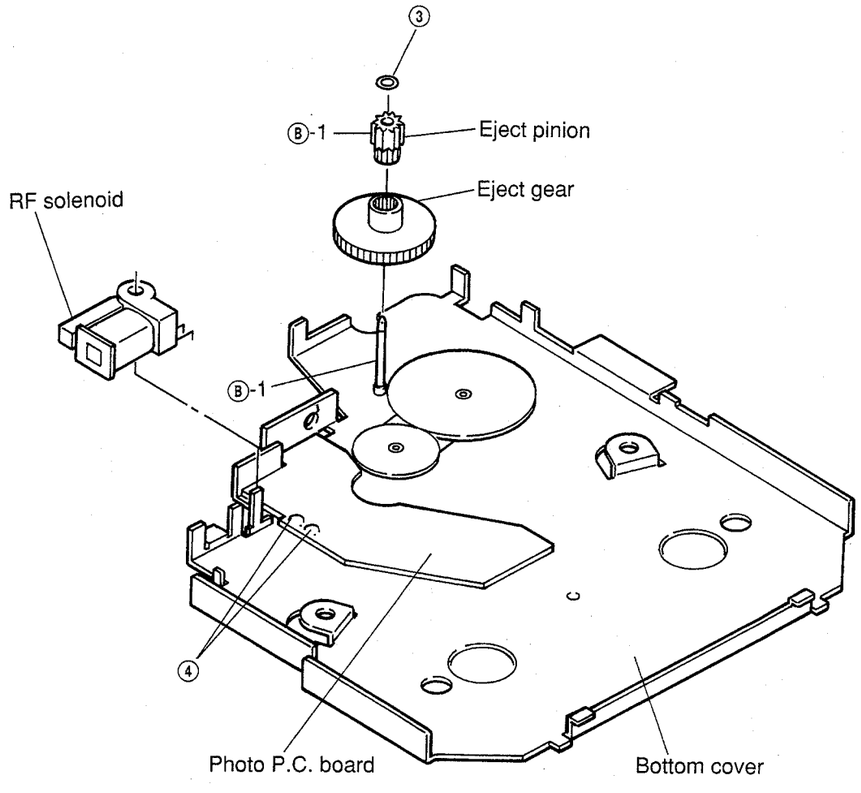


Figure 6

c. Replacement of the photo sensor
(1) Remove four solders ⑤ as shown in Figure 7.
(2) Remove the photo guide together with the photo sensor from the photo P.C. board as shown in Figure 7.
(3) Insert the new photo sensor into the photo guide, and bend the legs of the photo sensor in the direction marked Ⓑ-2 as shown in Figure 7.
(4) Insert the photo guide into the P.C. board and solder the legs so that the photo sensor is set as indicated by ⬚ in Figure 7.

Note: When using the soldering iron, set the temperature of the soldering iron to 350° ± 10° and the soldering time to 1 – 3 seconds. Take care that the solder is not loose, that there is no shortcircuit and that the coating is not damaged. Also take care that the photo guide is properly fixed and straight.

d. Replacement of the detector switch (Automatic metal pack-in)
(1) Remove 4 solders ⑥ with which the switch is fixed as shown in Figure 7.
(2) Prepare the terminals of the switch of the new solder as shown in Figure 8.
(3) After that, insert the switch into the photo P.C. board, and solder the terminals.

Note: When using the soldering iron, refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Also take care that the switch guide is properly fixed and straight.

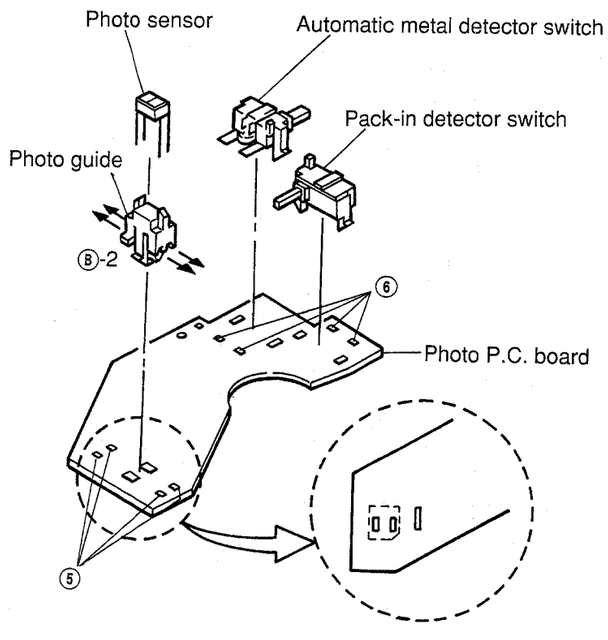


Figure 7

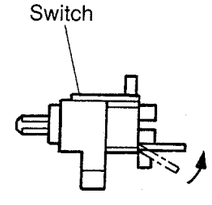


Figure 8

3. Replacement of the mounting parts on the rear of the main chassis

a. Replacement of the belt
(1) After removing the bottom cover, remove the belt.
(2) Clean the new belt with absolute alcohol, and fix it as shown in Figure 9.

Note: When fixing the belt, make sure that it is not twisted or dirty. When removing the belt, do not turn up the front of the chassis.

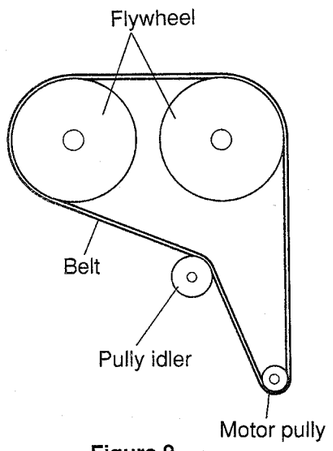


Figure 9

b. Replacement of the motor
(1) After removing the belt, remove spring ⑦ as shown in Figure 10.
(2) Remove solder ⑧-1, and remove the parallel wire (5P) from the control P.C. board as shown in Figure 11.
(3) Remove two screws ⑨ and ⑩, and remove the motor, taking care not to damage the motor idler gear. (Refer to Figure 10.)
(4) Mount the new motor following the removal steps in the reverse order.

Note: Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Since the parallel wire is very easily damaged, handle it with care.
Fasten the two screws with a fastening torque of 3 kg.cm.

*When inserting the clutch spring, be careful of the inserting direction as shown in the Figure.

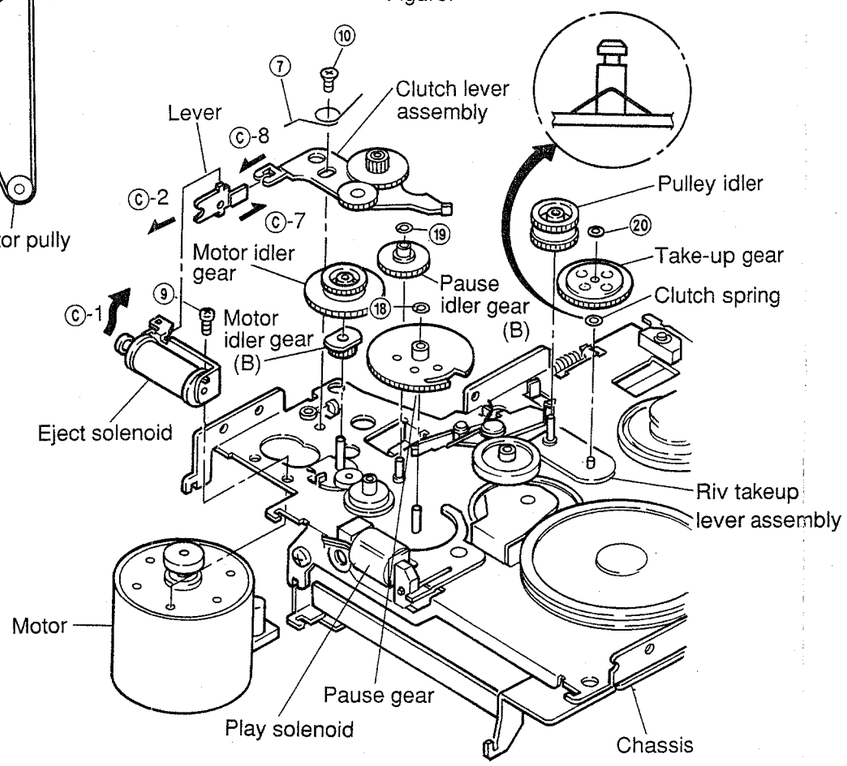
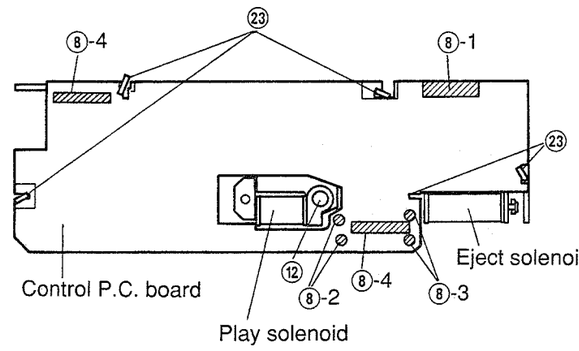


Figure 10

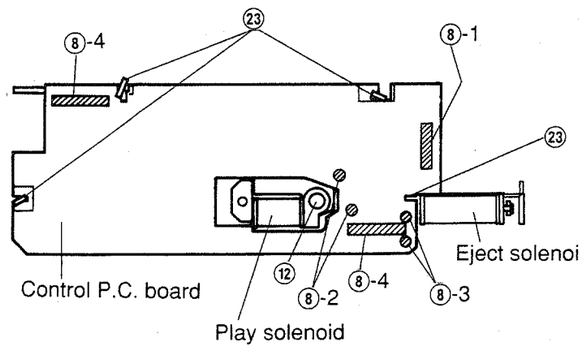
c. Replacement of the flywheels
(1) After removing the belt, pull out the two flywheels. Take care not to loose the polyslider washer ⑪ located between the flywheel and the chassis. (Refer to Figure 12.)
(2) Fix the polyslider washer to the new flywheel and mount the flywheel to the chassis.

d. Replacement of the play solenoid
(1) Remove the two solders ⑧-2 as shown in Figure 11.
(2) Remove one screw ⑫ and remove the solenoid as shown in Figure 11.
(3) Mount the new solenoid following the removal steps in the reverse order.

Note: Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Fasten the screws with a fastening torque of 2.3 kg.cm.



[For GR75E020, GR75E010, GR75E01A, GR75E01C models]



[For GR75L020, GR75L010 models]

Figure 11

e. Replacement of the eject solenoid
(1) Remove two solders ⑧-3. Take care not to loose the tube that protects the wire. (Refer to Figure 11.)
(2) Remove screw ⑨ and remove the play solenoid as shown in Figure 10.
(3) Align position Ⓒ-1 of the new solenoid with position Ⓒ-2 of the lever and fasten the screw as shown in Figure 10.
(4) Lead the wire through the tube and solder it.

Note: Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Fasten the screws with a fastening torque of 3 kg.cm. As the solder wires are not insulated, do not let them cross each other.

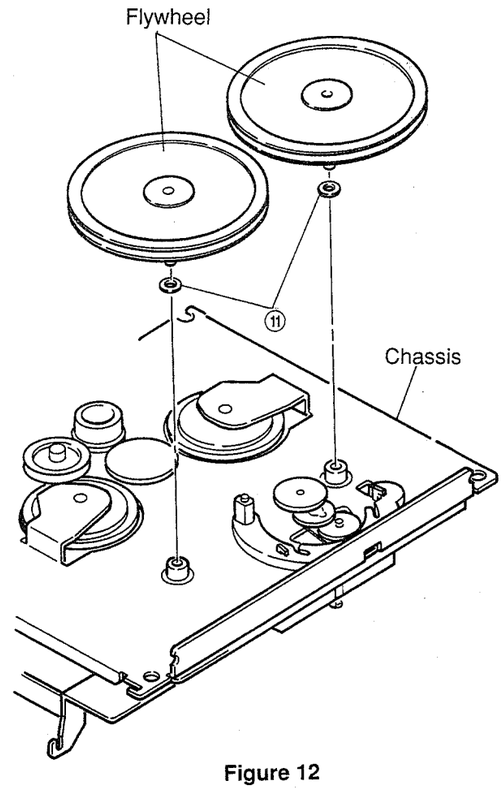


Figure 12

f. Replacement of gears

(f-1) Replacement of the reverse idler gear
(1) Remove M1.2 lock washer ⑬, pull it up from the stud of the chassis and remove the gear as shown in Figure 13.
(2) Remount following the removal steps in the reverse order.

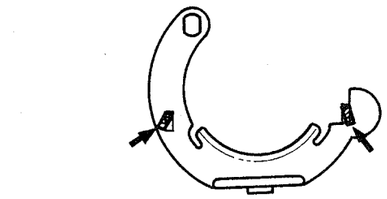
(f-2) Replacement of the sun gear
(1) Remove M1.2 lock washer ⑭, pull it up from the stud of the chassis and remove the gear as shown in Figure 13.
(2) Mount it, following the removal steps in the reverse order.

(f-3) Replacement of the fixing gear
(1) Adjust the two mounting claws for the fix gear on the chassis ⑮ and remove the section Ⓒ-3 of the gear by pulling it up in the direction of the arrow shown in Figure 13.
(2) Insert the section Ⓒ-4 of the new gear into the chassis, and mount it following the removal steps in the reverse order as shown in Figure 13.

(f-4) Replacement of the reverse lever assembly and planet gear
(1) Remove both the fixing gear and the sun gear and remove the reverse lever assembly as shown in Figure 13.
(2) Remove M1.7 lock washer ⑯ and remove the planet gear as shown in Figure 14.
(3) Mount the new planet gear and reverse lever following the removal steps in the reverse order.

Notes on f-1 through f-4:
After mounting all parts, check if the reverse lever moves in the directions marked Ⓒ-5 when the reverse gear is turned clockwise and counterclockwise.

*After mounting the fixing gear, bend the claws ⑮ into the form of as shown in the Figure.



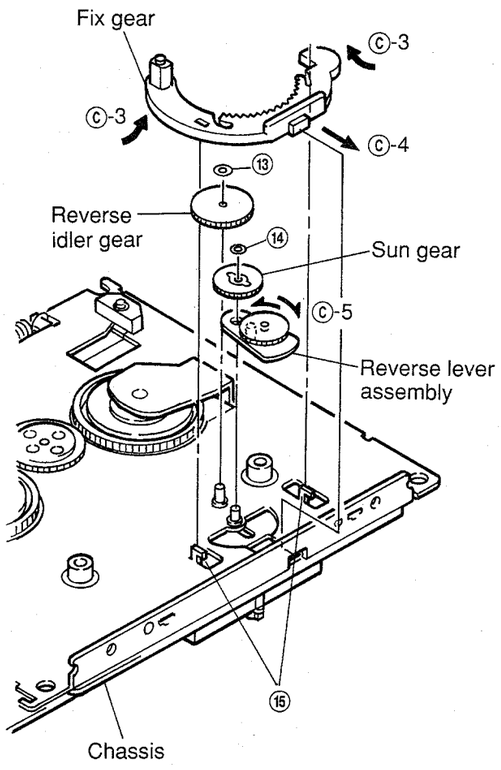
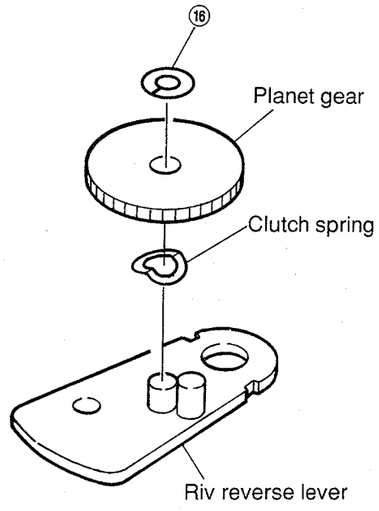


Figure 13

(f-5) Replacement of the clutch lever assembly and eject idler gear
(1) After removing the motor, remove the motor idler gear and the motor idler gear (B) and remove the clutch lever assembly as shown in Figure 10.
(2) Remove M1.2 lock washer ⑰ and remove the eject idler gear as shown in Figure 15.
(3) Mount the new gears and clutch lever following the removal steps in the reverse order.

Note: When mounting the gears to the lever, apply grease (FLOIL 425A) to the position Ⓒ-6 as shown in Figure 15. Align the position Ⓒ-7 with the position Ⓒ-8 and mount the clutch lever as shown in Figures 10 and 15.

(f-6) Replacement of the pause gear
(1) Remove M1.2 lock washer ⑱ and remove the pause gear pulling it up from the stud of the chassis as shown in Figure 10.
(2) Mount the new gear following the removal steps in the reverse order.



[Disassembly Reverse Lever Assembly]

Figure 14

(f-7) Replacement of the pause idler gear (B)
(1) After removing the motor and the motor idler gear, remove M1.2 lock washer ⑲ and remove the gear by pulling it up from the stud of the chassis as shown in Figure 10.
(2) Mount the new gear by following the removal steps in the reverse order.

(f-8) Replacement of the take-up gear
(1) After removing the belt and the pulley idler gear, remove M1.2 lock washer ⑳ by pulling it up from the stud of the riv take-up lever assembly as shown in Figure 10.
(2) Remount the take-up gear following the removal steps in the reverse order.

Notes on f:
Do not reuse the used washers. Take care to avoid damage by piercing and tearing.

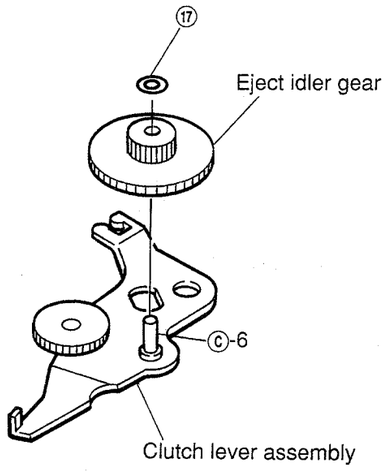


Figure 15

4. Replacement of the parts mounted on the front of the chassis

a. Replacement of the audio P.C. board
(1) Remove two solders ㉑ and remove the parallel wire (7P) and the head P.C. board as shown in Figure 16.
(2) Adjust the two claws ㉒ to the rectangular holes on the P.C. board and remove the P.C. board as shown in Figure 16.
(3) After replacement, mount the new P.C. board following the removal steps in the reverse order.

Note: The head P.C. board and the parallel wire are easily damaged. Handle them with care. Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Do not bring the soldering iron near the head P.C. board.

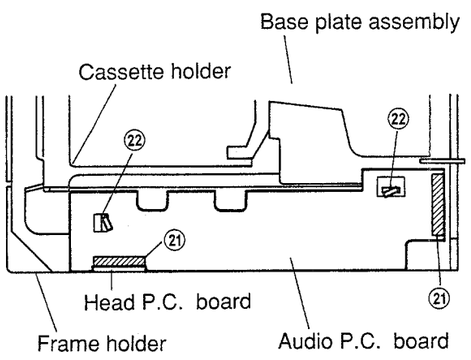


Figure 16

b. Replacement of the control P.C. board
(1) Remove seven solders ⑧ and remove the three parallel wires and the wires of the eject solenoid and of the play solenoid as shown in Figure 11.
(2) Remove five claws ㉓ and remove the P.C. board as shown in Figure 11. [For GR75E020, GR75E010, GR75E01A, GR75E01C models]
Remove four claws ㉓ and remove the P.C. board as shown in Figure 11.
[For GR75L020, GR75L010 models]
(3) After replacing the old P.C. board with a new one, mount it following the removal steps in the reverse order.

Note: As mentioned in Item 4-a, handle the parallel wires carefully, and be sure that the temperature of the soldering iron and the soldering time are proper. As the wires of the eject solenoid are not insulated, do not let them cross each other.

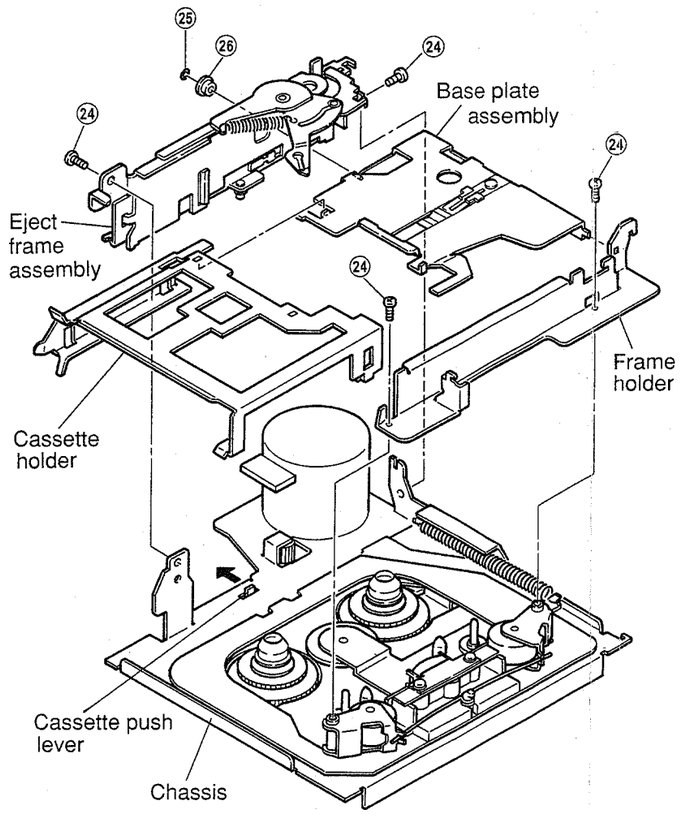


Figure 17

c. Disassembly and assembly of the cassette holder
(1) Remove four screws ㉔ and remove the eject frame assembly and the frame holder as shown in Figure 17.
(2) Remove M1.2 lock washer ㉕ and plate base roller ㉖ and remove the cassette holder and the base plate assembly as shown in Figure 17.
(3) Remount them following the removal steps in the reverse order.

Notes: 1. When mounting the cassette holder and the base plate, insert the slider shaft into the eject arm and fix them turning the slider shaft in the direction indicated by the arrow in the figure. Make sure that the cassette holder and the base plate are in the cassette-in mode during this operation. (Refer to Figure 18).
2. When mounting the eject frame assembly, push the cassette push lever in the direction indicated by the arrow in the Figure 17.
3. When mounting the base plate assembly and the eject frame assembly, or when mounting the eject frame assembly to the chassis, do not apply excessive force to avoid deformations of the eject arm and the frame.
4. Do not reuse the used washers. Take care to avoid damage by piercing and tearing.

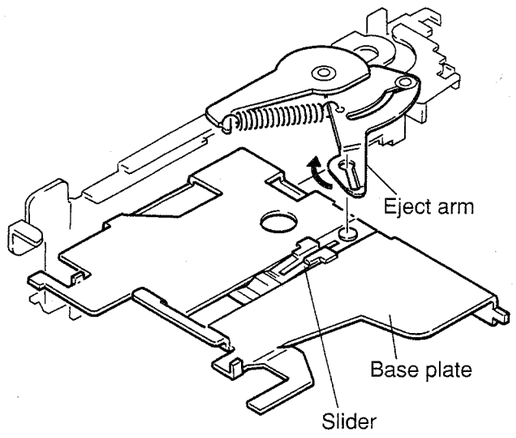


Figure 18

d. Replacement of the reels
(1) Remove M1.7 two lock washers ㉖ (Refer to figure 19).
(2) Move the select lever in the direction marked Ⓓ-1 in the Figure and remove the reel by gripping the reel gear as shown in Figure 19.
(3) After replacement, mount the new reels following the removal steps in the reverse order.
(4) After mounting, check the tape speed and the wow and flutter with test tape MTT-111.

Note: Since the reel is easily loosened if the cap is gripped, always handle it gripping the gear. Do not reuse the used washers. Take care to avoid damage by piercing and tearing.

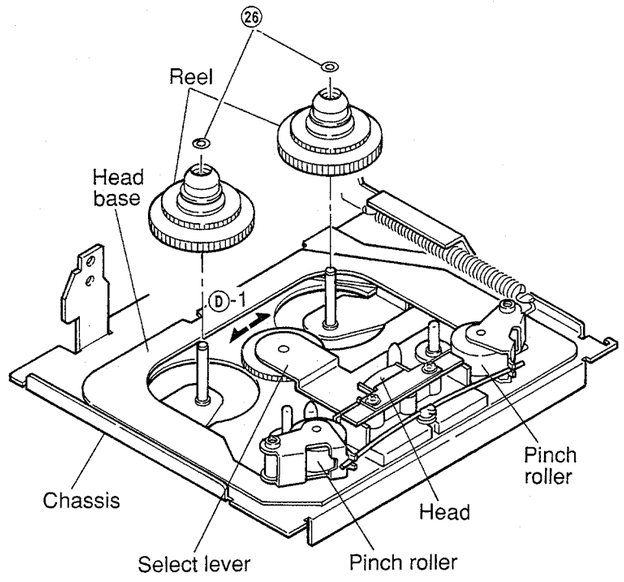


Figure 19

e. Replacement of the pinch rollers
(1) Remove pinch roller spring ㉗ as shown in Figure 20.
(2) Remove M3.1 two lock washers ㉘ and remove the pinch roller as shown in Figure 20.
(3) Mount the pinch rollers following the removal steps in the reverse order.
Apply insulation coating to the position Ⓓ-2 of the pinch roller as shown in Figure 20.

Note: Make sure that the pinch rollers are thoroughly fixed and that they are not deformed. Do not reuse used lock washers. Take care to avoid damage by piercing and tearing.

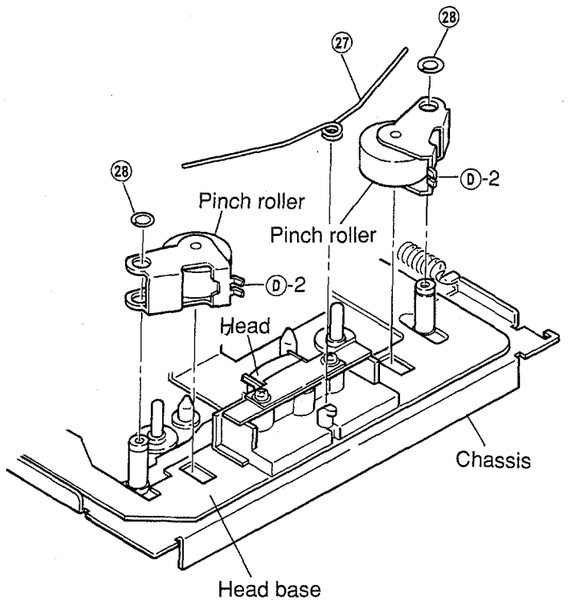


Figure 20

f. Replacement of the head
(1) After removing the pinch roller spring, remove two screws ㉙ as shown in Figure 21.
(2) Remove solder ㉚ and remove the head from the head P.C. board as shown in Figure 22.
(3) After replacement, mount the new head following the removal steps in the reverse order.

Notes: 1. Refer to Item 2-C to make sure that the temperature of the soldering iron and the soldering time are proper. Do not bring the soldering iron near the head P.C. board. Make sure that the head P.C. board is not lifted.
2. Fasten the two screws with a fastening torque of 2.3 kg.cm. Note that the tension of the head spring can be decreased if the screws are fastened too strongly.

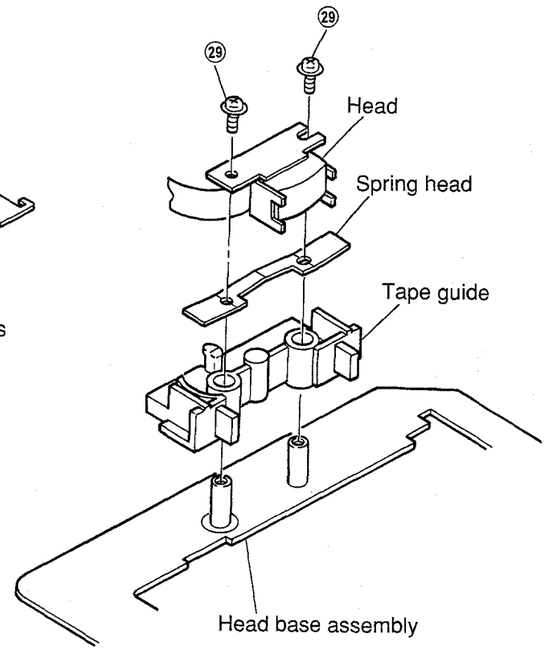


Figure 21

(4) Adjust the height of the head as shown in Figures 23, 24 and 25.
① Place the height adjustment gauge (AI-500) on the head base, and adjust the height so that the check bar fits in the tape head guide smoothly.
② When the check bar touches the top (or bottom) of the tape guide, insert a spacer (t 0.1 mm or polislider washer t 0.13 mm).
If necessary, remove the spacer.

Note: If you do not have a height gauge like described in (4)-①, run the tape at normal speed and adjust the height of the head and the tape head guide so that the tape does not curl.

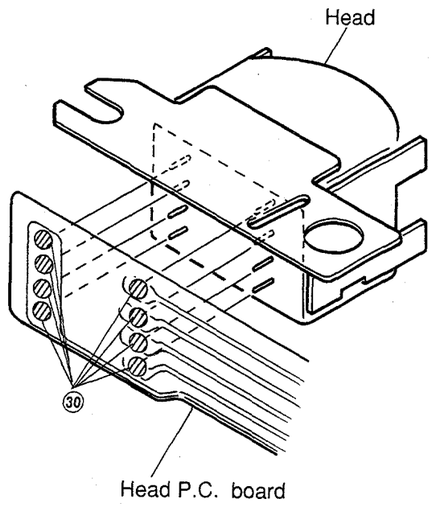


Figure 22

(5) After having assembled the complete mechanism, adjust the angle of the head with test tape MTT-113C. (Refer to chapter "Adjustment of the head angle".) After the adjustment, apply the screw lock and fix the screws.

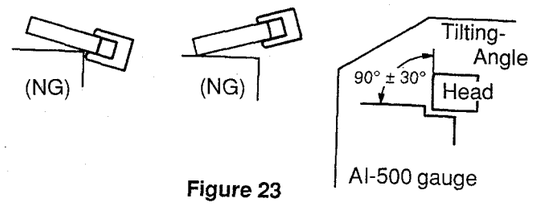


Figure 23

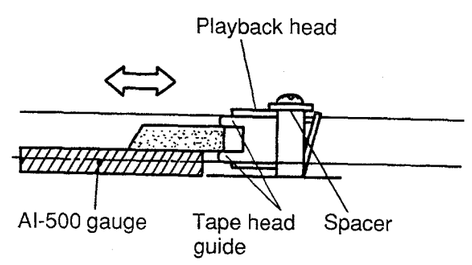


Figure 24

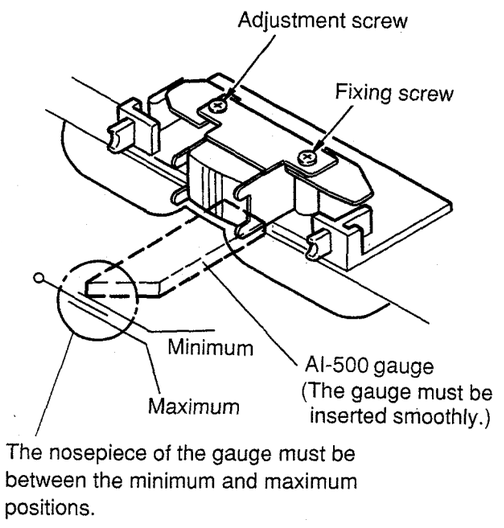
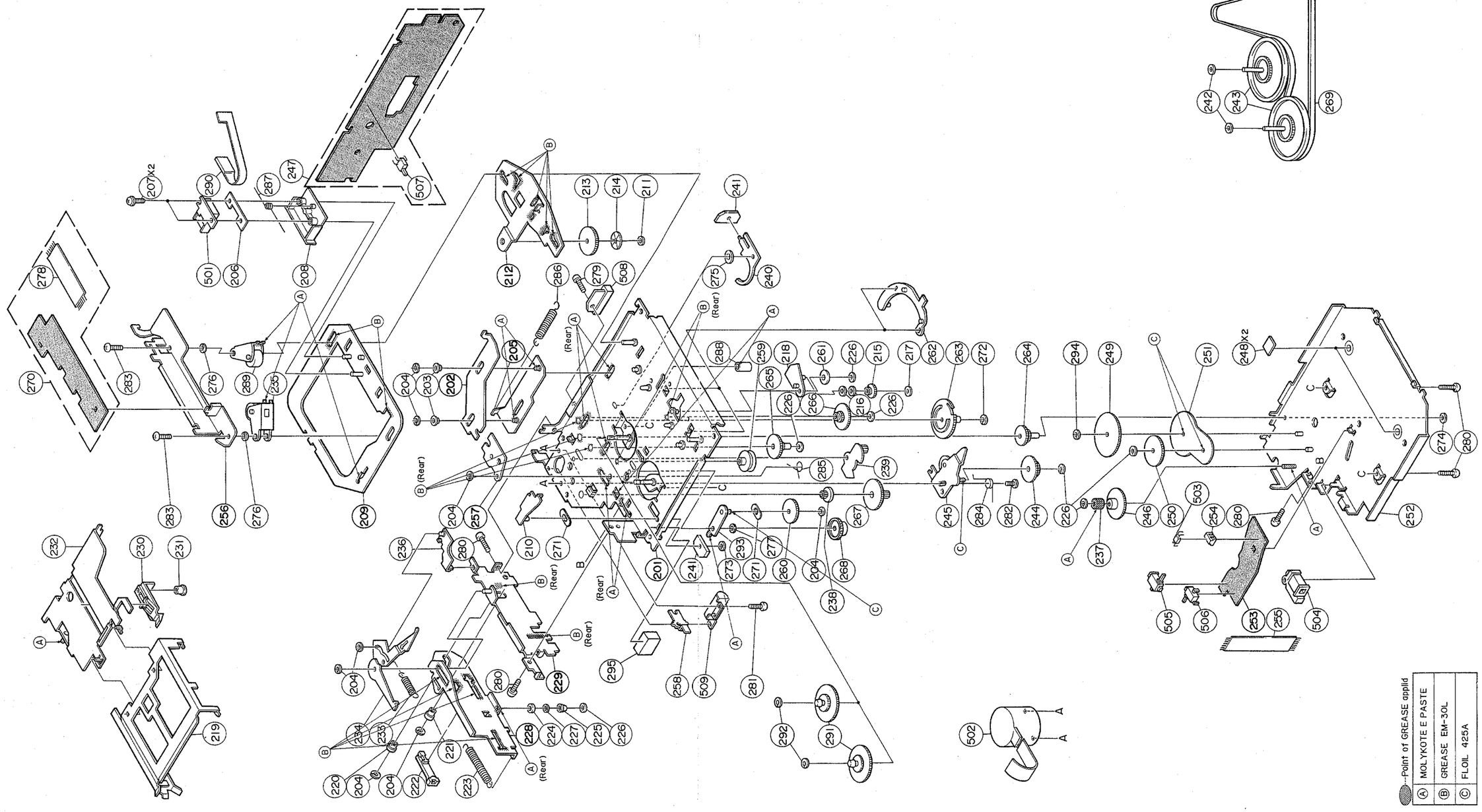


Figure 25

Exploded View (1/3)

● For GR75E010/01A/01C/020 Models



Cassette Deck Assembly Parts List (1/3)

Note : The parts without parts list are not supplied.

Symbol No.	IN-dex	Part No.	Description
203	3-C	43A11072W01	Roller, Sub Head
204		04B41345P01	Washer, Lock(M1.2)
206	2-B	41A10095W01	Spring, Head
207	2-B	03S40019G03	Screw, F-Locks(M2x4)
208	2-B	43B12545W01	Tape, Guide
210	4-C	01A10206W01	Assy.,Riv Lever R/F Sol
211	2-D	04B41345P29	Washer, Lock(M2.6)
213	2-D	44A10295W01	Gear, Sensor
214	2-D	14A10681W01	Reflector
215	3-E	44A10142W01	Gear, Planet
216	3-E	41A10097W02	Spring, Clutch
217	3-E	04B41345P35	Washer, Lock(M1.7)
218	3-E	01A21853W01	Assy., Riv Lever Reverse
219	4-B	07B10074W01	Holder, Cassette
220	5-B	43A12583W01	Roller, Eject
221	5-C	43A63281F01	Roller, Plate Base
222	5-C	44A82206F01	Rack
223	5-C	41B10386W03	Spring, GR(Rack)
224	4-C	43A10121W01	Roller, Eject A
225	4-D	43A10360W01	Roller, Eject B
226		04B41345P11	Washer, Lock(M1.2)
227	4-D	43A12377W01	Roller, Eject C
230	4-A	45B10376W01	Slider
231	4-B	47A63278F01	Shaft, Slider
232	4-A	01A10212W01	Assy.,Riv Plate Base
233	4-C	41B10386W01	Spring, Eject Arm
234	4-B	01A10148W01	Assy., Riv Eject Arm A
235	3-B	01B10381W02	Assy., Pinch Roller
236	4-C	45A10087W01	Lever Pack In SW
237	4-F	44A12975W01	Pinion, Eject
238	4-E	44A13617W01	Gear, Motor Idler(B)
239	3-E	01A10201W02	Assy., Riv Lever Pause
240	2-D	45A10092W01	Lever, Play
241		76T10374W01	Chip
242	1-G	04S40075G05	Washer Polyslider (M2.1)
243	1-G	01A10368W01	Assy., Flywheel
244	3-F	44A10141W01	Gear, Eject Idler
245	3-E	01A10205W01	Assy., Riv Lever Clutch A
246	3-F	44A10145W01	Gear, Eject
247	2-B	01V11500W18	Assy., GR Control P.C. Board
248	3-G	43A90918F01	Spacer, Polyslider
249	3-F	44A11063W01	Gear, Bottom A
250	3-F	44A11064W01	Gear, Bottom B
251	3-G	34A11122W02	Washer, GR
252	3-H	01A10210W02	Assy., Riv. Cover Bottom
254	3-G	15B11065W01	Guide, Photo
255	4-G	30T15128W01	Wire, PC Sensor(7P)
258	4-D	45A10101W01	Lever, Eject Sol
259	3-D	49A10131W01	Pulley, Idler
260	4-E	44A10133W01	Gear, Take Up
261	3-E	44A10134W01	Gear, Sun
262	3-E	44B10135W01	Gear, Fix
263	3-E	44B10136W01	Gear, Pause
264	3-F	44A10137W01	Gear, Pause Idler A
265	3-D	44A10379W01	Gear, Pause Idler B
266	3-E	44A10138W01	Gear, Reverse Idler
267	3-E	44A10139W01	Gear, Motor Idler
268	4-E	44A11062W01	Gear, Reel Idler
269	1-G	42A10380W01	Belt, GR
● 270	3-A	01V14700W68	Assy., GR Audio P.C. Board
■ 270	3-A	01V11500W19	Assy., GR Audio P.C. Board
▲ 270	3-A	01V11500W19	Assy., GR Audio P.C. Board
○ 270	3-A	01V11500W19	Assy., GR Audio P.C. Board
271	4-D	41A10097W02	Spring, Clutch
272	3-F	04B41345P15	Washer, Lock(M1.2)
273	4-D	04B41345P02	Washer, Lock(M1.7)
274	3-H	04B41345P17	Washer, Lock(M1)
275	2-D	04B41345P30	Washer, Lock(M3.1)
276	3-B	04B41345P32	Washer, Lock(M3.1)
277	4-E	04B41345P06	Washer, Lock(M2.1)
278	2-A	30T15126W02	Wire, PC Joint 7P
279	2-D	03S44205G78	Screw, Pan(M2x6)
280		03S44205G30	Screw, Pan(M2.6x4)
281	4-D	03S72235F38	Screw, Pan(M2x3.3)
282	3-F	03A12132W02	Screw, Eject Clutch (M2x2.3)
283		03S43997P64	Screw, Pan(M1.7x3)
284	3-F	41A10384W01	Spring, Eject Clutch
285	3-E	41A10385W01	Spring, Cas Push
286	2-C	41B10386W02	Spring, Sub Head
287	2-B	41A10387W01	Spring, Pinch Roller
288	3-D	43A12719W01	Roller, Pause
289	3-B	01B10381W01	Assy., Pinch Roller
290	2-B	84T10367W01	Head P.C. Board
● 291	4-E	01T15164W01	Assy., Reel
■ 291	4-E	01T15164W01	Assy., Reel
▲ 291	4-E	01T15164W02	Assy., Reel
○ 291	4-E	01T15164W01	Assy., Reel
292	4-E	04B41345P12	Washer, Lock(M1.7)
● 293	4-D	01A11078W01	Assy., Riv Lever Take Up
■ 293	4-D	01A11078W01	Assy., Riv Lever Take Up
▲ 293	4-D	01A11078W01	Assy., Riv Lever Take Up
○ 293	4-D	01A30161W01	Assy., Riv Lever Take Up
294	3-F	04B41345P34	Washer, Lock(M1.2)
295	4-D	75S12196W88	Rubber, Pad

Miscellaneous

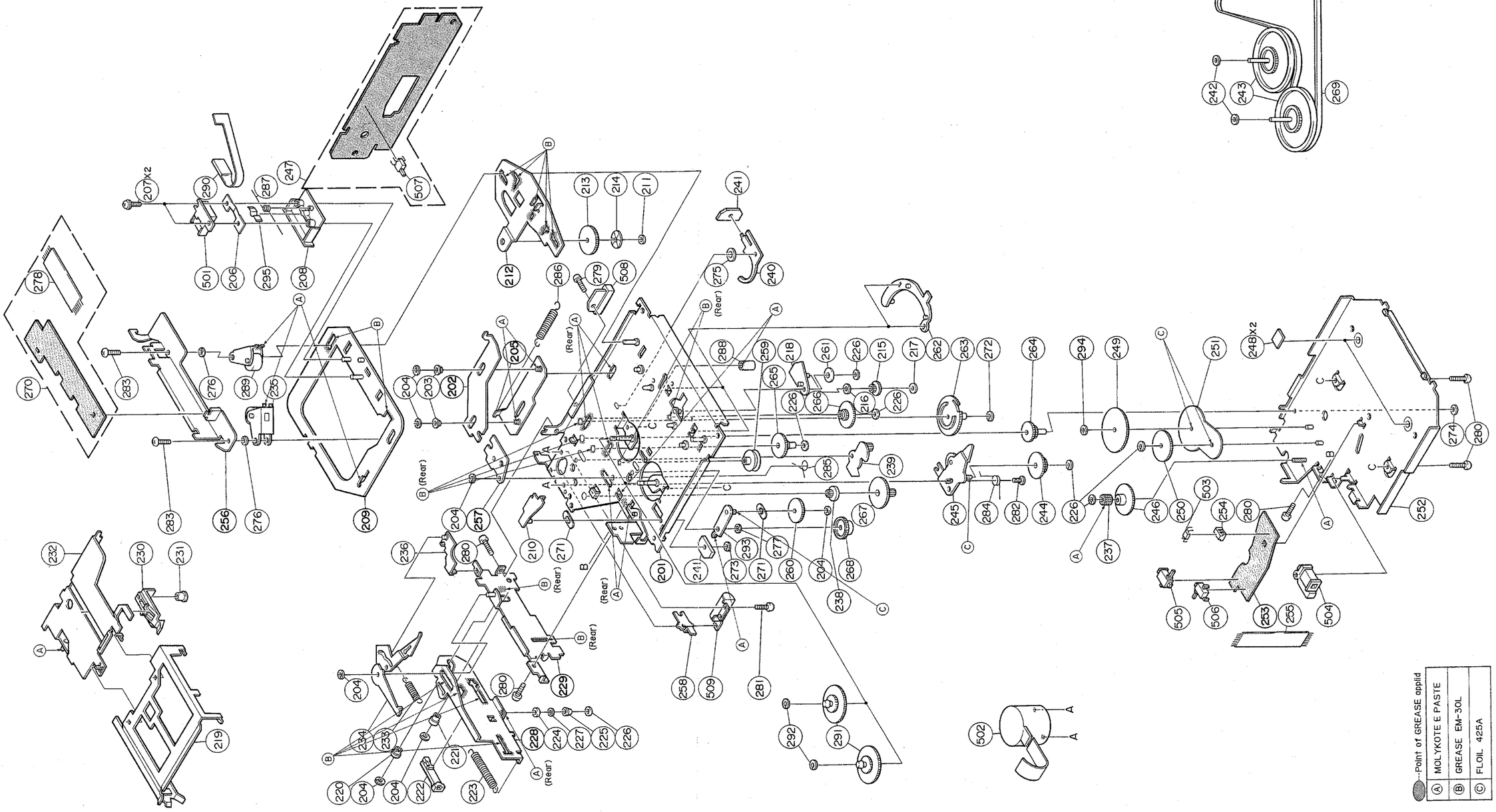
●	501	2-B	88T15971W01	Head
■	501	2-B	88T10373W01	Head
▲	501	2-B	88T10373W01	Head
○	501	2-B	88T10373W01	Head
	502	4-E	01V11500W64	Assy., Motor
	503	3-G	51T15144W01	Sensor, Photo
	504	4-G	01T10371W01	R/F Sol. Assy.
	505	4-F	40T15382W01	SW., Detector (Pack Down)
	506	4-G	40T15382W01	SW., Detector(Metal)
	507	2-C	40T15222W01	SW., Detector (Pack In)
	508	2-D	01T15249W01	Assy., Play Solenoid
	509	4-D	01T10369W02	Assy., Eject Solenoid

Notes : ● ; For GR75E020 model only ■ ; For GR75E010 model only
▲ ; For GR75E01A model only ○ ; For GR75E01C model only

Others ; Common

Exploded View (2/3)

● For GR75L010/020 Models



Cassette Deck Assembly Parts List (2/3)

Note : The parts without parts list are not supplied.

Symbol No.	IN-dex	Part No.	Description
203	3-C	43A11072W01	Roll, Sub Head
204		04B41345P01	Washer, Lock(M1.2)
206	2-B	41A21671W01	Spring, Head
207	2-B	03S40019G03	Screw, F-Locks(M2x4)
208	2-B	43B12545W01	Tape, Guide
210	4-C	01A10206W01	Assy., Riv Lever R/F Sol.
211	2-D	04B41345P29	Washer, Lock(M2.6)
213	2-D	44A10295W01	Gear, Sensor
214	2-D	14A10681W01	Reflector
215	3-E	44A10142W01	Gear, Planet
216	3-E	41A10097W02	Spring, Clutch
217	3-E	04B41345P31	Washer, Lock(M1.7)
218	3-E	01A21853W01	Assy., Riv Lever Reverse
219	4-B	07B10074W01	Holder, Cassette
220	5-B	43A12583W01	Roller, Eject
221	5-C	43A22153W01	Roller, Plate Base
222	5-C	44A82206F01	Rack
223	5-C	41B10386W03	Spring, GR(Rack)
224	4-C	43A10121W01	Roller, Eject(A)
225	4-D	43A10360W01	Roller, Eject(B)
226		04B41345P11	Washer, Lock(M1.2)
227	4-D	43A12377W01	Roller, Eject(C)
230	4-A	45B10376W01	Slider
231	4-B	47A63278F01	Shaft, Slider
232	4-A	01A10212W01	Assy., Riv Plate Base
233	4-C	41B10386W01	Spring, Eject Arm
234	4-B	01A21754W01	Assy., Riv Eject Arm(A)
235	3-B	01B10381W02	Assy., Pinch Roller
236	4-C	45A10087W01	Lever, Pack In SW.
237	4-F	44A20314W01	Pinion, Eject
238	4-E	44A13617W01	Gear, Motor Idler(B)
239	3-E	01A10201W02	Assy., Riv Lever Pause
240	2-D	45A10092W01	Lever, Play
241		76T10374W01	Chip
242	1-G	04S40075G05	Washer, Polyslider (M2.1)
243	1-G	01A10368W01	Assy., Flywheel
244	3-F	44A10141W02	Gear, Eject Idler
245	3-E	01A10205W02	Assy., Riv Lever Clutch(A)
246	3-F	44A10145W01	Gear, Eject
247	2-B	01V23700W03	Assy., GR Control P.C. Board
248	3-G	43A90918F01	Spacer, Polyslider
249	3-F	44A11063W01	Gear, Bottom(A)
250	3-F	44A11064W01	Gear, Bottom(B)
251	3-G	34A11122W02	Washer, GR
252	3-H	01A10210W02	Assy., Riv. Cover Bottom
254	3-G	15B11065W01	Guide, Photo
255	4-G	30T15126W01	Wire, PC Sensor(7P)
258	4-D	45A10101W01	Lever, Eject Sol.
259	3-D	49A10131W01	Pulley, Idler
260	4-E	44A10133W01	Gear, Take Up
261	3-E	44A10134W01	Gear, Sun
262	3-E	44B10135W01	Gear, Pix
263	3-E	44B21670W01	Gear, Pause
264	3-F	44A10137W01	Gear, Pause Idler(A)
265	3-D	44A10379W01	Gear, Pause Idler(B)
266	3-E	44A10138W01	Gear, Reverse Idler
267	3-E	44A10139W01	Gear, Motor Idler
268	4-E	44A11062W01	Gear, Reel Idler
269	1-G	42A10380W01	Belt, GR
★ 270	3-A	01V11500W19	Assy., GR Audio P.C. Board
◆ 270	3-A	01V14700W68	Assy., GR Audio P.C. Board
271		41A10097W02	Spring, Clutch
272	3-F	04B41345P15	Washer, Lock(M1.2)
273	4-D	04B41345P02	Washer, Lock(M1.7)
274	3-H	04B41345P17	Washer, Lock(M1)
275	2-D	04B41345P30	Washer, Lock(M3.1)
276	3-B	04B41345P32	Washer, Lock(M3.1)
277	4-E	04B41345P06	Washer, Lock(M2.1)
278	2-A	30T15126W02	Wire, PC Joint 7P
279	2-D	03S44205G78	Screw, Pan(M2x6)
280		03S44205G30	Screw, Pan(M2.6x4)
281	4-D	03S72235F38	Screw, Pan(M2x3.3)
282	3-F	03A12132W02	Screw, Eject Clutch (M2x2.3)
283		03S43997P64	Screw, Pan(M1.7x3)
284	3-F	41A10384W01	Spring, Eject Clutch
285	3-E	41A10385W01	Spring, Cas. Push
286	2-C	41B10386W02	Spring, Sub Head
287	2-B	41A10387W01	Spring, Pinch Roller
288	3-D	43A12719W01	Roller, Pause
289	3-B	01B10381W01	Assy., Pinch Roller
290	2-B	84T10367W01	Head P.C. Board
291	4-E	01T15164W03	Assy., Reel
292	4-E	04B41345P12	Washer, Lock(M1.7)
293	4-D	01A11078W01	Assy., Riv Lever Take Up
294	3-F	04B41345P34	Washer, Lock(M1.2)
295	2-B	26A20537W01	Shield, Plate

Miscellaneous

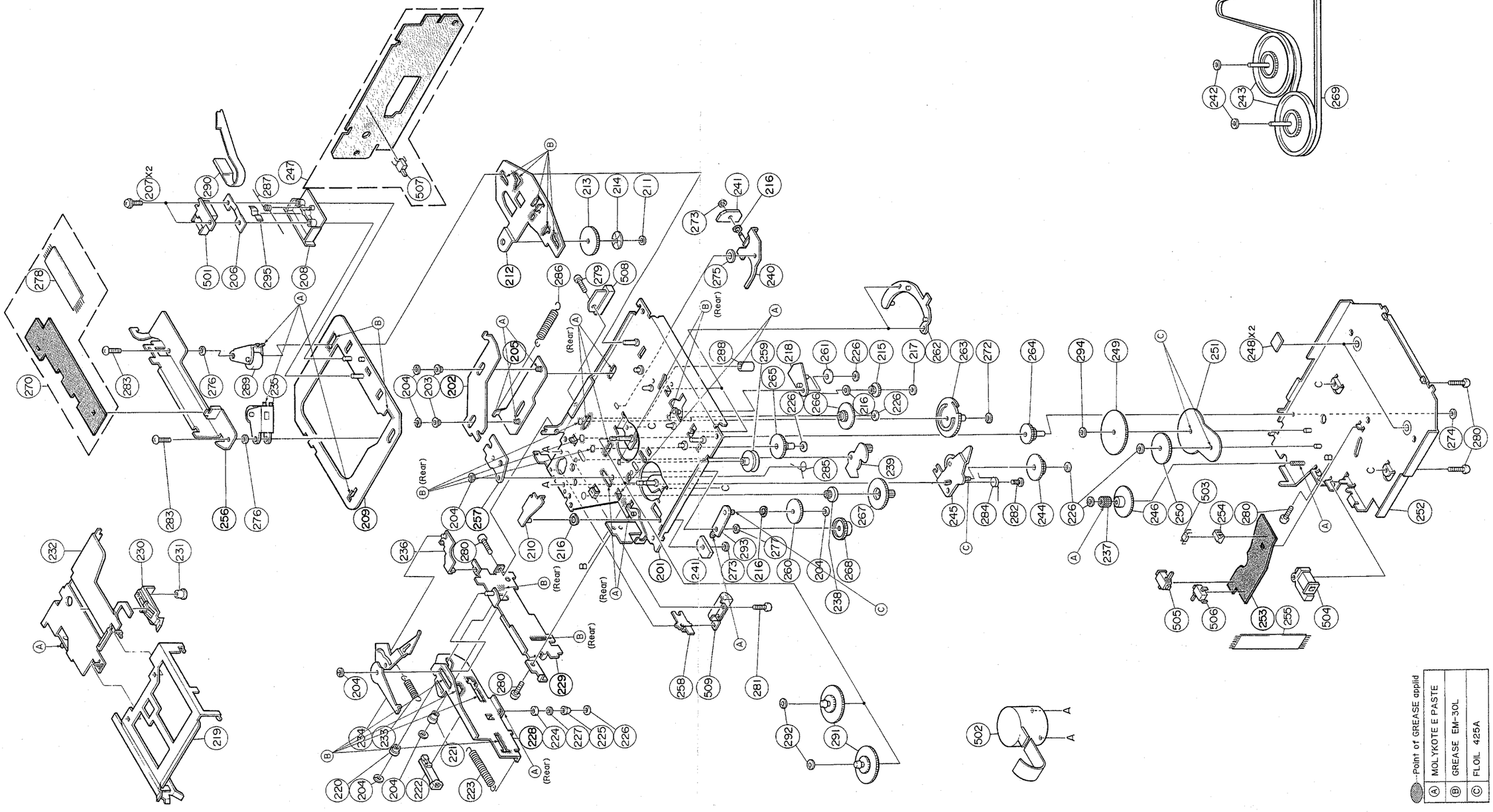
★	501	2-B	88T10373W01	Head
◆	501	2-B	88T15971W01	Head
	502	4-E	01V23900W60	Assy., Motor
	503	3-G	51T15144W01	Sensor, Photo
	504	4-G	01T10371W01	R/F Sol. Assy
	505	4-F	40T15382W01	SW., Detector (Pack Down)
	506	4-G	40T15382W01	SW., Detector (Metal)
	507	2-C	40T15222W01	SW., Detector (Pack In)
	508	2-D	01T15249W01	Assy., Play Solenoid
	509	4-D	01T10369W02	Assy., Eject Solenoid

Notes : ★ ; For GR75L010 model only ◆ ; For GR75L020 model only
Others : Common

Notes : ★ ; For GR75L010 model only ◆ ; For GR75L020 model only
Others ; Common

Exploded View (GR-Y Series) (3/3)

● **For GR75L02Y Model**



Cassette Deck Assembly Parts List (GR-Y Series) (3/3)

Note : The parts without parts list are not supplied.

Symbol No.	IN-dex	Part No.	Description
203	3-C	43A11072W01	Roll, Sub Head
204		04B41345P01	Washer, Lock(M1.2)
206	2-B	41A21671W01	Spring, Head
207	2-B	03S40019G03	Screw, F-Locks(M2x4)
208	2-B	43B12545W01	Tape, Guide
210	4-C	01A10206W01	Assy., Riv Lever R/F Sol.
211	2-D	04B41345P38	Washer, Lock(M2.6)
213	2-D	44A10295W01	Gear, Sensor
214	2-D	14A10681W01	Reflector
215	3-E	44A10142W01	Gear, Planet
216		41A10097W02	Spring, Clutch
217	3-E	04B41345P31	Washer, Lock(M1.7)
218	3-E	01A21853W01	Assy., Riv Lever Reverse
219	4-B	07B10074W01	Holder, Cassette
220	5-B	43A12583W01	Roller, Eject
221	5-C	43A63281F01	Roller, Plate Base
222	5-C	44A82206F01	Rack
223	5-C	41B10386W03	Spring, GR(Rack)
224	4-C	43A10121W01	Roller, Eject(A)
225	4-D	43A10360W01	Roller, Eject(B)
226		04B41345P11	Washer, Lock(M1.2)
227	4-D	43A12377W01	Roller, Eject(C)
230	4-A	45B10376W01	Slider
231	4-B	47A63278F01	Shaft, Slider
232	4-A	01A10212W01	Assy., Riv Plate Base
233	4-C	41B10386W01	Spring, Eject Arm
234	4-B	01A21754W01	Assy., Riv Eject Arm(A)
235	3-B	01B10381W02	Assy., Pinch Roller
236	4-C	45A10087W01	Lever, Pack In SW.
237	4-F	44A20314W01	Pinion, Eject
238	4-E	44A13617W01	Gear, Motor Idler(B)
239	3-E	01A10201W02	Assy., Riv Lever Pause
240	2-D	01A30879W01	Assy., Riv. Play Sol.
241		76T10374W01	Chip
242	1-G	04S40075G05	Washer, Polyslider (M2.1)
243	1-G	01A10368W01	Assy., Flywheel
244	3-F	44A10141W01	Gear, Eject Idler
245	3-E	01A10205W02	Assy., Riv Lever Clutch(A)
246	3-F	44A10145W01	Gear, Eject
247	2-B	01V23700W04	Assy., GR Control P.C. Board

Symbol No.	IN-dex	Part No.	Description
248	3-G	43A90918P01	Spacer, Polyslider
249	3-F	44A11063W01	Gear, Bottom(A)
250	3-F	44A11064W01	Gear, Bottom(B)
251	3-G	34A11122W02	Washer, GR
252	3-H	01A10210W02	Assy., Riv. Cover Bottom
254	3-G	15B11065W01	Guide, Photo
255	4-G	30T15126W01	Wire, PC Sensor(7P)
258	4-D	45A10101W01	Lever, Eject Sol.
259	3-D	49A10131W01	Pulley, Idler
260	4-E	44A10133W01	Gear, Take Up
261	3-E	44A10134W01	Gear, Sun
262	3-E	44B10135W01	Gear, Fix
263	3-E	44B21670W01	Gear, Pause
264	3-F	44A10137W01	Gear, Pause Idler(A)
265	3-D	44A10379W01	Gear, Pause Idler(B)
266	3-E	44A10138W01	Gear, Reverse Idler
267	3-E	44A10139W01	Gear, Motor Idler
268	4-E	44A11062W01	Gear, Reel Idler
269	1-G	42A10380W01	Belt, GR
270	3-A	01V33300W03	Assy., GR Audio P.C. Board
272	3-F	04B41345P15	Washer, Lock(M1.2)
273		04B41345P02	Washer, Lock(M1.7)
274	3-H	04B41345P17	Washer, Lock(M1)
275	2-D	04B41345P30	Washer, Lock(M3.1)
276	3-B	04B41345P32	Washer, Lock(M3.1)
277	4-E	04B41345P37	Washer, Lock(M2.1)
278	2-A	30T15126W02	Wire, PC Joint 7P
279	2-D	03S44205G78	Screw, Pan(M2x6)
280		03S44205G30	Screw, Pan(M2.6x4)
281	4-D	03S72235F38	Screw, Pan(M2x3.3)
282	3-F	03A12132W02	Screw, Eject Clutch (M2x2.3)
283		03S43997P64	Screw, Pan(M1.7x3)
284	3-F	41A10384W01	Spring, Eject Clutch
285	3-E	41A10385W01	Spring, Cas. Push
286	2-C	41B10386W02	Spring, Sub Head
287	2-B	41A10387W01	Spring, Pinch Roller
288	3-D	43A12719W01	Roller, Pause
289	3-B	01B10381W01	Assy., Pinch Roller
290	2-B	84T35271W01	Head P.C. Board

Symbol No.	IN-dex	Part No.	Description
291	4-E	01T15164W03	Assy., Reel
292	4-E	04B41345P12	Washer, Lock(M1.7)
293	4-D	01A30161W01	Assy., Riv Lever Take Up
294	3-F	04B41345P34	Washer, Lock(M1.2)
295	2-B	26A20537W01	Shield, Plate
		Miscellaneous	
501	2-B	88T15971W01	Head
502	4-E	01V23900W60	Assy., Motor
503	3-G	51T15144W01	Sensor, Photo
504	4-G	01T10371W01	R/F Sol. Assy
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